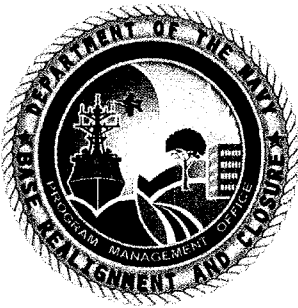


EXHIBIT 5



Final

Amended Parcel B Record of Decision

**Hunters Point Shipyard
San Francisco, California**

January 14, 2009

Prepared for:

**Base Realignment and Closure
Program Management Office West
San Diego, California**

Prepared by:

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Prepared under:

**Naval Facilities Engineering Command
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This public summary represents information presented in the document listed below. Neither the document nor the public summary has been reviewed by the regulatory agencies.

Public Summary: Final Amended Parcel B, Record of Decision for Hunters Point Shipyard, San Francisco, California, January 14, 2009

The Department of Navy (Navy) has prepared this final amended record of decision (ROD) to address remaining contamination at Parcel B at Hunters Point Shipyard in San Francisco, California. The remedial action selected in this amended ROD is necessary to protect the public health, welfare, and the environment from actual or potential releases of contaminants from the site. The selected remedial action for Parcel B addresses metals, polycyclic aromatic hydrocarbons (PAH), and pesticides in soil and shoreline sediment, volatile organic compounds (VOC) as vapors and in groundwater, several metals (chromium VI, copper, lead, and mercury) in groundwater, and radionuclides in structures (such as buildings) and in soil.

The Navy considered the following remedial alternatives for contaminants in soil: (1) no action; (2) institutional controls (IC) and maintained landscaping; (3) ICs, limited excavation, and off-site disposal; (4) ICs and covers; and (5) a combination of ICs, covers, excavation, and disposal. The Navy considered the following remedial alternatives for contaminants in groundwater: (1) no action; (2) long-term monitoring and ICs; and (3) *in situ* treatment of VOCs (and metals, if necessary) using biological compounds or zero-valent iron, monitoring, and ICs. The Navy considered the following remedial alternatives for radiologically impacted soil or structures: (1) no action; (2) surveying radiologically impacted areas that may include structures and former building sites, decontaminating (and demolishing if necessary) buildings, excavating storm drain and sanitary sewer lines and soils in impacted areas, and screening, separating, disposing of radioactive sources and contaminated excavated soil at an off-site low-level radioactive waste facility, cover and groundwater monitoring at Installation Restoration (IR) Sites 7 and 18, and ICs; and (3) the same activities as (2) plus closure in place of a deep pump shaft beneath Building 140. The amended Selected Remedy for Parcel B is Alternative S-5 (excavation, disposal, covers, and ICs) for soil; Alternative GW-3A (treatment, monitoring, and ICs) for groundwater; and Alternative R-2 (survey, decontamination, excavation, disposal, release, cover and groundwater monitoring at IR Sites 7 and 18, and ICs) for radiologically impacted structures and soil.

Information Repositories: A complete copy of the "Final Amended Record of Decision for Parcel B" dated January 14, 2009, is available to community members at:

San Francisco Main Library
100 Larkin Street
Government Information Center, 5th Floor
San Francisco, CA 94102
Phone: (415) 557-4500

Anna E. Waden Bayview Library
5075 Third Street
San Francisco, CA 94124
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The report is also available to community members on request to the Navy. For more information about environmental investigation and cleanup at Hunters Point Shipyard, contact Lara Urizar, remedial project manager for the Navy, at:

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ACRONYMS AND ABBREVIATIONS

§	Section
§§	Sections
µg/L	Microgram per liter
ACHP	Advisory Council on Historic Preservation
ARAR	Applicable or relevant and appropriate requirement
ARIC	Area requiring institutional controls
BAAQMD	San Francisco Bay Area Air Quality Management District
Basin Plan	Water Quality Control Plan for the San Francisco Bay Basin
Bay Plan	San Francisco Bay Plan
BCDC	San Francisco Bay Conservation and Development Commission
BCT	Base Realignment and Closure Cleanup Team
BHC	Benzene hexachloride, also known as hexachlorocyclohexane
bgs	Below ground surface
BRAC	Base Realignment and Closure
Cal. Code Regs.	California Code of Regulations
Cal/EPA	California Environmental Protection Agency
CDPH	California Department of Public Health
CE2	CE2 Corporation
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
ch.	Chapter
cm ²	Square centimeter
COC	Chemical of concern
COPC	Chemical of potential concern
CTR	California Toxics Rule
div.	Division
DNAPL	Dense nonaqueous-phase liquid
dpm	Disintegrations per minute
DTSC	Department of Toxic Substances Control
EPA	U.S. Environmental Protection Agency
EPC	Exposure point concentration
ER-M	Effects range-median
ERRG	Engineering/Remediation Resources Group
ESD	Explanation of significant differences

ACRONYMS AND ABBREVIATIONS (Continued)

Fed. Reg.	Federal Register
FFA	Federal facility agreement
FOSET	Finding of suitability for early transfer
FOST	Finding of suitability for transfer
FS	Feasibility study
ft ²	Square feet
HGAL	Hunters Point groundwater ambient level
HHRA	Human health risk assessment
HI	Hazard index
HPAL	Hunters Point ambient level
HPS	Hunters Point Shipyard
HRA	Historical radiological assessment
IC	Institutional control
IR	Installation Restoration
IT Corp.	IT Corporation
ITSI	Innovative Technical Solutions, Inc.
LFR	Levine-Fricke-Recon, Inc.
LUC RD	Land use control remedial design
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MCL	Maximum contaminant level
MCLG	Maximum contaminant level goal
mg/kg	Milligram per kilogram
mg/L	Milligram per liter
MOA	Memorandum of agreement
NAVSEA	Naval Sea Systems Command
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NRC	U.S. Nuclear Regulatory Commission
NRDL	Naval Radiological Defense Laboratory
O&M	Operation and maintenance
OSWER	Office of Solid Waste and Emergency Response
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl
pCi/g	Picocurie per gram
pCi/L	Picocurie per liter
POC	Point of compliance

ACRONYMS AND ABBREVIATIONS (Continued)

ppt	Part per thousand
PQL	Practical quantitation limit
PRC	PRC Environmental Management, Inc.
PRG	Preliminary remediation goal
RAB	Restoration Advisory Board
RACR	Removal action completion report
RAMP	Remedial action monitoring program
RAO	Remedial action objective
RBC	Risk-based concentration
RCRA	Resource Conservation and Recovery Act
RD	Remedial design
Res.	Resolution
RESRAD	Residual radioactive (model)
RESRAD-BUILD	Residual radioactive-building (model)
Rfd	Reference dose
RI	Remedial investigation
RMP	Risk management plan
ROD	Record of decision
RU	Remedial unit
SARA	Superfund Amendments and Reauthorization Act
SDWA	Safe Drinking Water Act
SES-TECH	SES-TECH, Inc.
SF	Slope factor
SFRA	San Francisco Redevelopment Agency
Shaw	Shaw Environmental Inc.
SHPO	State Historic Preservation Office
SI	Site inspection
SLERA	Screening-level ecological risk assessment
SVE	Soil vapor extraction
SVOC	Semivolatile organic compound
SWRCB	State Water Resources Control Board
TBC	To be considered
TCRA	Time-critical removal action
TDS	Total dissolved solids
Tetra Tech	Tetra Tech EM Inc.
TPH	Total petroleum hydrocarbons
tit.	Title
TMSRA	Technical memorandum in support of a record of decision amendment
TtEC	Tetra Tech EC, Inc.

ACRONYMS AND ABBREVIATIONS (Continued)

URS	URS Corporation
USACE	U.S. Army Corps of Engineers
U.S.C.	United States Code
VOC	Volatile organic compound
Water Board	San Francisco Bay Regional Water Quality Control Board
WQO	Water quality objective
ZVI	Zero-valent iron

DECLARATION STATEMENT FOR PARCEL B

SITE NAME AND LOCATION

This amended Record of Decision (ROD) addresses Parcel B at Hunters Point Shipyard in San Francisco, California. The U.S. Environmental Protection Agency (EPA) Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Information System identification (ID) number is CA1170090087.

STATEMENT OF BASIS AND PURPOSE

This amended ROD presents the amended selected remedy to remediate soil, groundwater, and structures at Parcel B. The document was developed and the amended remedy was selected in accordance with CERCLA of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (Title 42 *United States Code* Section 9601, et seq.) and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (Title 40 *Code of Federal Regulations* Part 300). This decision is supported by information contained in the administrative record file (see [Attachment A](#)). The Department of the Navy, EPA, the California Environmental Protection Agency Department of Toxic Substances Control (DTSC), and the San Francisco Bay Regional Water Quality Control Board (Water Board) concur on the amended selected remedy for Parcel B.

ASSESSMENT OF THE SITE

The amended selected remedy in this amended ROD is necessary to protect the public health and welfare and the environment from actual or threatened releases of pollutants, chemicals, or hazardous substances from soil, groundwater, and structures at Parcel B. The amended selected remedy was based on the following:

- Site histories
- Field investigations
- Laboratory analytical results
- Evaluation of potential human health and ecological risks
- Current and reasonably anticipated future land use
- 1997 Parcel B ROD

Results of the previous investigations indicated Parcel B poses a potential risk to human health and the environment based on current and reasonably anticipated future land and groundwater uses. The human health risk assessment (HHRA) identified the following chemicals (listed by medium) as posing risk to human health:

- Soil: Metals, volatile organic compounds (VOC), semivolatile organic compounds (SVOC), pesticides, polychlorinated biphenyls (PCB), and radionuclides
- Groundwater: VOCs and SVOCs
- Structures: Radionuclides

The screening-level ecological risk assessment (SLERA) identified the following chemicals in sediment as posing risk to ecological receptors along the shoreline of Parcel B: metals, SVOCs, pesticides, and PCBs.

The SLERA identified a potential risk to saltwater aquatic organisms from concentrations of chromium VI, copper, lead, and mercury in groundwater at Parcel B that could discharge into San Francisco Bay. The SLERA did not identify other ecological risks because, other than the shoreline, Parcel B supports only limited habitat, the presence of terrestrial receptors is limited, and future land uses would not create additional ecological habitat.

DESCRIPTION OF THE AMENDED SELECTED REMEDY

The Navy has prepared this amended ROD for Parcel B because the Navy has concluded that the remedy selected in the 1997 ROD needs to be amended to be protective of human health and the environment in the long term and that the proposed amendments to the remedy will fundamentally alter its basic features. The original remedy for soil involved excavation and off-site disposal; however, this strategy was unable to achieve cleanup goals across Parcel B. The widespread distribution of metals, especially arsenic and manganese, in soil was the primary obstacle to this strategy. The amended remedy incorporates covers for the remaining soil containing hazardous substances to prevent exposure. Likewise, groundwater contamination has been found to be more widespread and at higher concentrations than was known when the original remedy for groundwater was selected. The original remedy relied on monitoring; the amended remedy includes active treatment for groundwater. Finally, the original remedy did not address radiological contaminants, and the amended remedy incorporates actions to address radioactive chemicals found in soil and structures at Parcel B.

This amended ROD selects further action for soil, groundwater, and structures at Parcel B. The amended selected remedy includes the following components:

- Alternative S-5
 - Excavate soil in select areas where concentrations of chemicals of concern (COC) exceed remediation goals. Transport the excavated contaminated soil and materials off site to an appropriate disposal facility. Backfill excavated areas with clean fill material.
 - Install durable covers over the entire parcel to prevent contact with any COCs that are not excavated. Covers would be maintained to laterally contain the soil at the shoreline.
 - Install a revetment along the shoreline of Redevelopment Blocks BOS-1 (at Installation Restoration [IR] Site 7) and BOS-3 (at IR-26).

- Install a soil vapor extraction (SVE) system at IR-10 to remove VOCs from soil.
- Apply institutional controls for VOCs across most of Parcel B, as described in [Section 12.2.1.5](#). A soil gas survey may be conducted in the future. The results of the survey would be used for the following purposes:
 - to evaluate potential vapor intrusion risks,
 - to identify COCs for which risk-based numeric action levels for VOCs in soil gas would be established (based on a cumulative risk of 10^{-6}),
 - to identify where the initial areas requiring institutional controls (ARIC) for VOCs would be retained and where they would be released, and
 - to evaluate the need for additional remedial action in order to remove ARICs.
- Monitoring for methane that will follow removal of the methane source would be used to evaluate whether contingencies such as additional engineering controls (for example, methane venting or vapor barriers) or additional institutional controls (IC) would be necessary.
- Implement ICs, including controls to maintain the integrity of the covers (as well as where the covers meet the shoreline). Legal instruments known as restrictive covenants in Quitclaim Deed(s) between the Navy and the property recipient and in “Covenant(s) to Restrict Use of Property” among DTSC, the California Department of Public Health (CDPH), and the Navy will be implemented to establish land use restrictions to limit exposure to contaminated soil and groundwater. Activity restrictions will be addressed in a risk management plan(s) (RMP) that may be prepared by the City and County of San Francisco and reviewed and approved by the federal facility agreement (FFA) signatories and/or a Land Use Control remedial design (LUC RD) report that will be reviewed and approved by the FFA signatories. The RMP(s) and/or the LUC RD will specify soil and groundwater management procedures for implementation of the ICs including management procedures to allow certain activities that would otherwise be restricted or prohibited to be conducted without further approvals from the FFA signatories and CDPH, where applicable. [Section 12.2.1.5](#) contains more details on ICs.
- Alternative GW-3A
 - Treat groundwater by injecting a biological amendment in the plume near IR-10 (Redevelopment Blocks 8 and 9) to break down VOCs where concentrations exceed remediation goals.
 - Treat groundwater, if necessary, by injecting an organo-sulfur compound to immobilize metal COCs (chromium VI, copper, lead, and mercury). The need to treat these metals will be based on further analysis of groundwater data against trigger levels; this analysis will occur during the remedial design (RD).
 - Implement a groundwater monitoring program to verify treatment effectiveness during and after treatment. The monitoring program will be flexible to allow modifications as data are collected.
 - Implement ICs (see [Section 12.2.1.5](#)).

- Alternative R-2
 - Decontaminate radiologically impacted structures and dismantle them if necessary. Excavate radiologically impacted storm drain and sanitary sewer lines and other areas, as necessary, throughout Parcel B. Survey buildings and former building sites. Screen removed materials and transport contaminated material off site to an appropriate disposal facility.
 - Conduct a surface scan for radiological materials over all of IR-07 and IR-18. Remove all radiological anomalies exceeding radiological remediation goals for residential soil (see [Table 8-4](#)) to a depth of 1 foot (the maximum effective depth of the surface scan). Add a 1-foot-thick layer of clean soil above the surveyed surface over the portion of IR-07 and IR-18 that is radiologically impacted (see [Figure 5-2](#)). Install a demarcation layer on the new soil surface in the portion of IR-07 and IR-18 that is radiologically impacted. Install a new 2-foot-thick soil cover over all of IR-07 and IR-18. Transport radioactive anomalies and contaminated soil off site to an appropriate low-level radioactive waste facility.
 - Monitor groundwater at IR-07 and IR-18 for radionuclides of concern.
 - Obtain unrestricted closure based on protocols in the Base-wide Radiological Work Plan - Revision 2 ([Tetra Tech EC, Inc. 2008b](#)) (termed “free release”) for all radiologically impacted areas and structures in Parcel B except for the radiologically impacted portion of IR-07 and IR-18 (see [Figure 5-2](#)). ICs for radionuclides would be necessary only for the radiologically impacted portion of IR-07 and IR-18.
 - Implement ICs (see [Section 12.2.1.5](#)).

The Navy decided to address some of the newly identified sources (that is, methane and mercury sources and radiologically impacted storm drains, sanitary sewers, and former building sites) using time-critical removal actions (TCRA). Although the TCRAs may not be completed by the time the amended ROD is signed, the TCRAs are intended to achieve cleanup goals that are identical to the RAOs identified in this ROD. In the event that the TCRAs do not achieve their cleanup goals, cleanup will continue in accordance with the remedial action selected in this ROD until the RAOs are achieved.

STATUTORY DETERMINATIONS

The amended selected remedies for soil, groundwater, and structures at Parcel B are protective of human health and the environment, comply with federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, are cost-effective, and use permanent solutions and alternative treatment or resource recovery technologies to the maximum extent practicable. The SVE component (coupled with on- or off-site treatment) of the amended selected remedy for soil satisfies the statutory preference for treatment as a principal element of the remedy; SVE will reduce the toxicity, mobility, or volume of pollutants, chemicals, or hazardous substances as a principal element. However, other components of the remedy for soil (limited excavation and covers) and sediment (revetment) do not satisfy the statutory preference for remedies that employ treatment to reduce the toxicity, mobility, or volume of hazardous substances, pollutants, or contaminants as a principal element. Treatment is not practical to

address contaminants in soil or sediment because the contaminants are too widespread and effective treatment technologies are not available for some of the contaminants (especially metals and radionuclides). The amended selected remedy for groundwater (in situ treatment) satisfies the statutory preference for treatment as a principal element of the remedy; the remedy will reduce the toxicity, mobility, or volume of pollutants, chemicals, or hazardous substances as a principal element.

A statutory review pursuant to CERCLA Section 121 and the National Oil and Hazardous Substances Pollution Contingency Plan will be conducted within 5 years after the remedial action is initiated to ensure that the remedy is, or will be, protective of human health and the environment. This review is needed because the amended remedy will result in hazardous substances, pollutants, or contaminants remaining on site above levels that allow for unlimited use and unrestricted exposure. Statutory 5-year reviews for remedial actions at Hunters Point Shipyard, including Parcel B, are based on the original remedial actions started in 1998. The first 5-year review was completed in 2003; the second 5-year review was completed in 2008. The next 5-year review is scheduled for 2013.

DATA CERTIFICATION CHECKLIST

Checklist Item	Description
Chemicals of potential concern (COPC) and their concentrations	COPCs were characterized throughout Parcel B based on data from previous investigations. A description of these investigations is provided in Section 2.2.2 of this amended ROD. A description of the nature and extent of contamination at Parcel B is presented in Section 5.5 of this amended ROD.
Risk assessments representative of the COPCs	A human health risk assessment (HHRA) and screening-level ecological risk assessment (SLERA) were conducted using data representative of current conditions at Parcel B. Results of these risk assessments are presented in Section 7.0 of this amended ROD.
Remediation goals established for the chemicals of concern (COC) and the basis for these goals	<p>The amended selected remedies for soil, groundwater, and structures at Parcel B are designed to protect human health and the environment. Remediation goals were selected, by chemical, based on a comparison of (1) the concentration calculated in the risk assessment corresponding to a cancer risk of 10^{-6} or a noncancer hazard index of 1, (2) the laboratory practical quantitation limit (PQL), and (3) for metals only, the ambient level at Hunters Point Shipyard (called the HPAL for soil and the HGAL for groundwater). The highest of the three values was selected as the remediation goal for each chemical. For groundwater, if a legal requirement (see the discussion of applicable or relevant and appropriate requirements [ARAR] later) applied to the chemical, that value was selected; otherwise, the same comparison was made.</p> <p>The remediation goals for radionuclides in soil were derived from EPA preliminary remediation goals and other sources identified in Table 8-4. These goals were reviewed and approved by the FFA signatories and CDPH in the Final Action Memorandum for the Base-wide Radiological Removal Action (Navy 2006) and the Final Radiological Addendum to the Technical Memorandum in Support of a ROD Amendment (TtEC 2008). The remediation goals for radionuclides for building and equipment surfaces were based on Atomic Energy Commission Regulatory Guide 1.86 to meet the 25 millirem per year dose limits of the Nuclear Regulatory Commission. The remediation goals for radionuclides in water were derived from <i>Radionuclides Notice of Data Availability Technical Document</i> (EPA 2000) by comparing the limits from two criteria and using the most conservative limit. Modeling for risk and dose to release each radiologically impacted site will be based on the results of the final status surveys.</p> <p>Action levels for VOCs in soil gas may be established using data from a soil gas survey conducted in the future. The action levels for soil gas would correspond to a cancer risk of 10^{-6}.</p> <p>The remediation goals are presented in Section 8.0 of this amended ROD.</p>
How source materials constituting principal threats are addressed	Former buildings and surrounding areas were investigated and evaluated as potential sources. Results of previous investigations have not identified any significant soil or groundwater contamination or suggested the presence of a continuing source of CERCLA chemicals that would constitute a principal threat waste. The nature and extent of remaining contamination at Parcel B is discussed in Section 5.5 of this amended ROD.

DATA CERTIFICATION CHECKLIST (CONTINUED)

Checklist Item	Description
Current and reasonably anticipated future land-use assumptions and current and potential beneficial uses of groundwater used in the HHRA and ROD	Small portions of Parcel B are currently used for commercial purposes. Risks were evaluated based on planned reuses including: residential, industrial, recreational, and construction workers (commercial reuses are included in industrial and residential reuses). Planned reuses for Parcel B are described by the San Francisco Redevelopment Agency in the 1997 "Hunters Point Shipyard Redevelopment Plan." Current and reasonably anticipated future land use and beneficial groundwater use assumptions used in the HHRA are discussed in Section 7.1 of this amended ROD.
Potential land and groundwater use that will be available at the sites as a result of the selected remedies for soil and groundwater	Planned reuses at Parcel B include: research and development, mixed uses, educational and cultural, and open space. The remedies for Parcel B will support these long-term uses. Although the amended selected remedies will reduce the land use restrictions that are necessary to protect human health and the environment, future land and groundwater use at Parcel B is envisioned to always be subject to some ICs. Future land use controls will apply restrictions to redevelopment blocks located at IR-07 and IR-18 that will prohibit some of the reuses identified in the 1997 redevelopment plan. Reuse areas and redevelopment blocks may change in the future.
Estimated capital, annual operation and maintenance, and total present worth costs, discount rate, and the number of years over which the remedy cost estimates are projected	Estimated capital and operation and maintenance costs are presented in Section 12.3 .
Key factors that led to selecting the remedies	<p>The key factors for selecting the amended remedy for soil, sediment, and structures at Parcel B were (1) the remedy provides the best long-term effectiveness by permanently removing the greatest volume of contamination (by excavation) and preventing exposure to the remaining contamination (by covers); (2) the remedy includes the largest amount of treatment to destroy contaminants (using SVE for collection and on- or off-site methods to destroy them); and (3) the remedy contains the most active remediation components and involves the least reliance on ICs to prevent exposure.</p> <p>The key factors for selecting the amended remedy for groundwater at Parcel B were (1) the remedy reduces the toxicity, mobility, and volume of VOCs by implementing an expedient and aggressive active treatment strategy; (2) the remedy provides long-term protection by reducing concentrations of VOCs and their associated risk; and (3) the remedy is the most cost effective of the active treatment options.</p> <p>Section 12.0 of this amended ROD describes the selected remedy for Parcel B. Section 13.0 describes the statutory determinations that were made regarding the amended selected remedies. Section 14.0 documents that the Navy has reviewed all written and oral comments submitted during the public comment period. The Navy has determined that a change to the selected remedy for radionuclides is necessary based on new information related to Building 140 that was obtained after the proposed plan was submitted.</p>

AUTHORIZING SIGNATURES

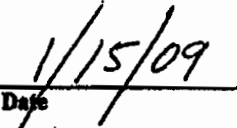
This signature sheet documents the Navy's and EPA's co-selection of the amended remedy in this amended ROD. This signature sheet also documents the State of California's (DTSC and Water Board) concurrence with this amended ROD. The parties may sign this sheet in counterparts.

AUTHORIZING SIGNATURES

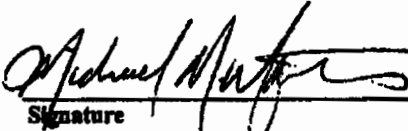


Signature

Mr. Keith S. Forman
BRAC Environmental Coordinator
BRAC Program Management Office West
Department of the Navy

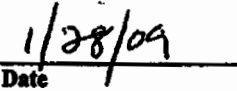


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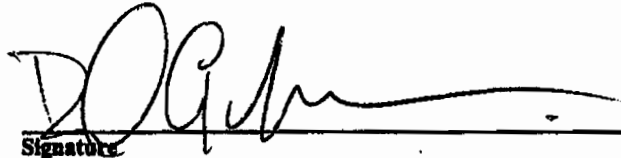


Signature

Mr. Michael M. Montgomery
Assistant Director of Federal Facilities and
Site Cleanup Branch, Region 9
U.S. Environmental Protection Agency

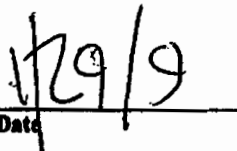


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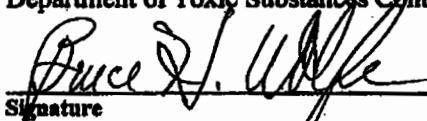


Signature

Mr. Daniel E. Murphy, P.E.
Supervising Engineer
Brownfields and Environmental Restoration Program
Department of Toxic Substances Control

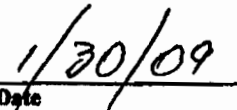


Date



Signature

Mr. Bruce H. Wolfe
Executive Officer
California Environmental Protection Agency
San Francisco Bay Regional Water Quality Control Board



Date

1.0 INTRODUCTION

This Record of Decision (ROD) Amendment presents the amended selected remedies for Parcel B at Hunters Point Shipyard (HPS) in San Francisco, California. The document was developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA) (Title [Tit.] 42 *United States Code* [U.S.C.] Section [§] 9601 et seq.) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) (Tit. 40 *Code of Federal Regulations* [CFR] § 300). The decision for Parcel B is based on the information contained in the administrative record. The administrative record index for Parcel B is found in [Attachment A](#).

The following sections describe the site name and location, summarize the original ROD that was signed in October 1997, describe the need to revise the original remedy for Parcel B, and outline the organization of this amended ROD.

1.1 SITE NAME, LOCATION, AND DESCRIPTION

This amended ROD addresses Parcel B at HPS in San Francisco, California (see [Figure 1-1](#)). Hunters Point Shipyard includes about 866 acres (420 acres on land and 446 acres under water in San Francisco Bay). Parcel B includes 59 acres on the north side of HPS (see [Figure 1-2](#)). The U.S. Environmental Protection Agency (EPA) CERCLA Information System identification number is CA1170090087.

The Navy used HPS starting around 1939 for shipbuilding, repair, and maintenance. Most of Parcel B was formerly part of the industrial support area and was used for shipping, ship repair, training, barracks, and offices. Environmental activities at Parcel B have been conducted under the Navy's Installation Restoration (IR) Program in accordance with CERCLA and the NCP. HPS property was placed on the National Priorities List in 1989 as a Superfund site, pursuant to CERCLA as amended by SARA, because past shipyard operations left hazardous substances on site. In 1991, HPS was designated for closure under the Defense Base Closure and Realignment Act of 1990. [Section 2.1](#) contains more details on the history of HPS and Parcel B.

According to the City and County of San Francisco's redevelopment plan (San Francisco Redevelopment Agency [[SFRA](#)] 1997), Parcel B will be zoned for the following reuses: research and development, mixed uses, educational and cultural, and open space. The table below lists the IR sites and planned reuses for Parcel B. [Figure 1-3](#) illustrates the IR sites and redevelopment blocks at Parcel B. (Note that future land use controls will apply restrictions to redevelopment blocks located at IR-07 and IR-18 that will prohibit some of the reuses identified in the 1997 redevelopment plan [see [Section 12.2.1.5](#)]. Reuse areas and redevelopment blocks may change in the future.)

Redevelopment Block	IR Site	Planned Reuse
1	Part of 18	Mixed Use
2	Parts of 07 and 18	Research and Development
3	07	Research and Development
4	Part of 62	Mixed Use
5	Parts of 62 and 23	Research and Development
6	61 and part of 23	Research and Development
7	42 and SI-31	Mixed Use
8	10	Mixed Use
9	Part of 24	Mixed Use
12	20 and part of 24	Mixed Use
15	Part of 26	Mixed Use
16	Part of 26	Educational/Cultural
BOS-1	Parts of 07 and 18	Open Space
BOS-2	60 and part of 24	Open Space
BOS-3	Part of 26	Open Space

1.2 OCTOBER 1997 ROD

The Navy and the regulatory agencies signed the ROD for Parcel B, dated October 7, 1997, on October 9, 1997 ([Navy 1997](#)). The ROD addressed both soil and groundwater contaminated by CERCLA hazardous substances at Parcel B.

The Navy selected excavation and off-site disposal as the remedy for contaminated soil at Parcel B. The major components of the soil portion of the remedy, as described in the ROD, included:

- Excavation of contaminated soil to the groundwater table or 10^{-6} cancer risk (residential) (later modified by an explanation of significant differences [ESD]; see [Section 2.2.5](#) for additional details).
- Off-site disposal of contaminated soil (with treatment at the off-site landfill, if necessary to meet land disposal restrictions).
- Placement of clean backfill in the excavated areas.
- Deed notification indicating that soil below the groundwater table in remediated areas may be contaminated.
- Institutional controls (IC) governing the handling of residual contaminated soil.

Two subsequent changes were made to the soil portion of the selected remedy in the October 1997 ROD for Parcel B. These changes are described in the ESDs dated August 24, 1998, and May 4, 2000; [Section 2.2.5](#) discusses the ESDs.

The Navy selected groundwater monitoring, lining storm drains, and removing steam and fuel lines as primary components of the selected remedy. The major components of the groundwater portion of the remedy, as described in the ROD, included:

- Lining the storm drains and pressure grouting the bedding material in the storm drains at IR-07 and IR-10 in those locations where the storm drain system is below the groundwater table in an affected groundwater area.
- Removal of steam and fuel lines.
- Deed restrictions on Parcel B, such as prohibiting all uses of groundwater within the shallow water-bearing zones to 90 feet below ground surface (bgs).
- Groundwater monitoring for up to 30 years to evaluate the effectiveness of the removal actions for soil and to monitor concentrations of hazardous substances that may migrate toward San Francisco Bay. Groundwater monitoring at IR-10 to monitor for the future potential degradation of trichloroethene to vinyl chloride.
- Deed notification indicating that contamination may be present in groundwater in the remediated areas and that surface discharge of contaminated groundwater is prohibited.

1.3 NEED FOR REEVALUATION OF ORIGINAL REMEDY

Updated information about Parcel B became available after the original 1997 ROD was signed from three major sources: (1) the original remedial action for soil conducted in 1998 through 2001, (2) groundwater monitoring from 1999 to the present, and (3) a historical radiological assessment (HRA) of HPS and subsequent removal actions to address radiological contaminants. Updated information includes items such as:

- The ubiquitous nature of metals in soil across Parcel B
- The presence of methane and mercury contaminant sources
- The findings of a screening-level ecological risk assessment (SLERA) for shoreline areas
- Changes in concentrations and toxicity criteria for volatile organic compounds (VOC) found in groundwater
- Findings from the HRA related to radiological contaminants

The first 5-year review ([Tetra Tech 2003e](#)) concluded that the remedy selected in the original ROD ([Navy 1997](#)) needed to be modified to be protective in the long term. The HPS Base Realignment and Closure (BRAC) Cleanup Team (BCT) therefore extended the schedule of CERCLA activities (contained in the federal facility agreement [FFA]) to evaluate modifications to the Parcel B remedy and to support preparation of a Technical Memorandum in Support of a ROD Amendment (TMSRA) ([ChaduxTt 2007](#)) and the

amended ROD itself. [Table 1-1](#) summarizes the activities conducted in the CERCLA process at Parcel B.

The Navy has prepared this amended ROD for Parcel B because the Navy has concluded that the proposed changes to the selected remedy based on the evaluations in the TMSRA will “fundamentally alter the basic features of the selected remedy with respect to scope, performance, or cost,” as described in the NCP at 40 CFR § 300.435(c)(2)(ii). For example, the consideration of parcel-wide covers to address soil contamination instead of excavation represents a fundamental change in the scope of the remedy for soil. Likewise, addition of active groundwater treatment methodologies to the remedy is a fundamental change in the scope of the remedy for groundwater. The updated information mentioned above and the more comprehensive understanding of groundwater, together with the planned land use, indicate the need to revise the conceptual site model, evaluate additional remedial actions, and amend the ROD.

The following sections describe the rationale for reevaluating the original remedy based on the updated information gained at the site (also see [Section 5.0](#) for a discussion of site characteristics). The TMSRA ([ChaduxTt 2007](#)) presents a more detailed discussion of the need to reevaluate the original remedy, including a comparison of the original remedy to other remedial alternatives developed to address the updated site information.

1.3.1 Soil

The discrete release of chemicals, referred to as the “spill model,” was the basis for the remedial action selected in the 1997 ROD. Under this conceptual model, high chemical concentrations occur near the center of the release and concentrations decrease outward. The delineation process used in the remedial action followed this model: successive “step-out” samples were collected from release areas identified by the remedial investigation to define the extent of the release outward until all samples contained concentrations that were less than the ROD cleanup goals. The spill model for chemical releases was appropriate for many areas at Parcel B. The Navy successfully delineated and removed all contaminants at concentrations above cleanup goals at 93 of 106 excavations implemented for the remedial action. The ubiquitous distribution of metals in soil, especially manganese, led to reevaluation of the remedy at the remaining 13 excavations at Parcel B, however.

The significant additional information gained from sampling and excavation during the remedial action indicated that the spill model did not account for all areas where chemical concentrations exceeded cleanup goals. As a result, the Navy recognized that the spill model needed to be supplemented to account for these other areas. A group of metals, especially arsenic and manganese, consistently exceeded cleanup goals at locations across Parcel B. The widespread distribution of this group of metals in soil at Parcel B (that is, their ubiquitous nature) is related to their occurrence in the local bedrock that was quarried for fill during the expansion of HPS in the 1940s. These metals occur naturally in the Franciscan Formation bedrock (especially in the serpentinite, chert, and basalt rock types) and were distributed throughout all parcels, including Parcel B, as HPS was built. Although it is possible that some releases of these metals could have occurred from Navy activities, the range of concentrations of these metals at Parcel B is consistent with the range of concentrations in local bedrock. The

resulting distribution of metals concentrations in soil is nearly random across the parcel, and the spill model for release does not apply. However, the concentrations of metals in the bedrock fill sometimes exceed the original ROD cleanup goals, and these metals concentrations are the primary reason that the “step-out” delineation process was not successful everywhere on Parcel B. Application of the spill conceptual model to the ubiquitous metals would result in excavation of most of the bedrock fill at Parcel B to a depth of 10 feet bgs, which is the depth required by the original ROD. Therefore, the Navy recognized the need to supplement the conceptual model to account for the ubiquitous distribution of metals in soil. Amended remedial alternatives in this amended ROD address ubiquitous metals using options such as containment beneath covers and institutional controls.

The term “ubiquitous” refers to metals that are naturally occurring or are in the same concentration ranges as naturally occurring metals in the source material (including material from the same geologic formations in the San Francisco area) used for filling operations at HPS. The Navy acknowledges that industrial sources of metals exist at HPS and that there is a potential that some concentrations of metals could have sources other than naturally occurring materials. The Navy has worked to remove these sources during the response actions taken to date. The Navy further acknowledges that the regulatory agencies do not agree with the Navy’s position that ubiquitous metals are naturally occurring. Amended remedial alternatives included in this amended ROD address these concentrations of metals, regardless of their source.

In addition to identifying the ubiquitous nature of several metals in the bedrock fill, sampling and excavation during the remedial action found that the areas at IR-07 and IR-18 contained fill with a high proportion of demolition debris. The highly nonuniform distribution of chemicals within the debris fill also did not conform to the spill model and, consequently, excavations at IR-07 and IR-18 often greatly exceeded the originally planned extent of the removals. Furthermore, methane was detected in soil gas at a small area of the debris fill at IR-07. In addition, radiological contamination has been identified at some locations of Parcel B that was not known when the original ROD was prepared. The debris fill, methane, and radiological contamination created additional needs to update the conceptual site model, and additional remediation alternatives were prepared to address this new understanding of site conditions.

Comparison of the remedial action envisioned in the original ROD to the actions completed to date illustrates the large difference between the planned and actual site conditions at Parcel B. The estimate in the original ROD for the remedial action included removal of 38,000 cubic yards of soil over a period of 3 to 6 months at a cost of \$11.2 million. The remedial action at Parcel B removed more than 100,000 cubic yards of soil over a period of 31 months at a cost of more than \$40 million. (The 31 months when excavation occurred extended from July 1998 to December 2001.) [Figure 1-4](#) compares the excavation areas estimated in the ROD with the actual remedial action excavations.

The updated site information and results from the remedial actions undertaken at Parcel B indicate the need to reevaluate the remedy selected in the original ROD. The remedy selected in the original ROD would not be protective of human health and the environment based on the updated information about the site. The following is a summary of the reevaluation of the

original remedy against the two threshold and five balancing remedy selection criteria listed in the NCP at 40 CFR 300.430(e)(9)(iii). Section 6.0 of the TMSRA presents a more detailed discussion, including a comparison of the original remedy to other alternatives developed to address the updated site information. In the discussions below, the five balancing criteria are rated on a ranking scale using the following categories that were established in the TMSRA, listed from least to most highly rated: not acceptable, poor, good, very good, and excellent.

Original Soil Remedy

Protectiveness – the original ROD alternative did not consider excavation below 10 feet bgs, and it is likely that deeper excavation would be necessary to remove the sources of methane at IR-07 and mercury at IR-26. The original ROD alternative also did not account for potential radiological contamination. Therefore, the rating for the original ROD alternative for overall protection of human health and the environment would be not protective based on the methane and mercury sources that remain in place and the potential radiological contamination.

Compliance with applicable or relevant and appropriate requirements (ARAR) – the original remedy would not meet the ARARs identified in this amended ROD.

Long-term effectiveness – the original remedy would rank as poor based on the methane and mercury sources that remain in place.

Reduction of toxicity, mobility, and volume through treatment – excavation does not involve treatment; the original remedy ranks poor and would continue to rank as poor based on updated information about the site.

Short-term effectiveness – the original remedy would rank poor on this criterion based on the much longer time needed for implementation (more than 31 months to date versus 3 to 6 months) and the subsequent much longer exposure to workers and the community. The original remedy would not achieve the remedial action objectives unless much of the bedrock fill and the debris fill area were removed, resulting in more exposure to workers and the community.

Implementability – the original remedy would rank as poor based on the large-scale operation to remove bedrock fill and the debris fill area.

Cost – the original remedy would rank as poor based on the significantly higher (more than 3.5 times) cost required (more than \$40 million to date versus \$11.2 million). Total cost for full implementation would likely total more than \$100 million.

Overall, the reevaluation of the original remedy would result in a determination of “not protective” based on lack of adequate protectiveness.

In summary, the excavation and off-site disposal remedy for soil, as described in the original ROD, would not be protective in the long term. Knowledge that the Navy has gained during the remedial action established the need to (1) supplement the conceptual

model to include the random distribution of ubiquitous metals in soil, account for methane, mercury, radiological contamination, and the debris fill area at IR-07 and IR-18, (2) evaluate additional remedial actions for soil at Parcel B, and (3) amend the ROD. The amended ROD modifies the remedy for soil to support additional remedial actions that will address remaining risks.

1.3.2 Groundwater

The remedy selected in the original ROD for groundwater included lining storm drains, removing steam and fuel lines, restricting use of groundwater, and groundwater monitoring. However, the remedy selected for groundwater in the original ROD should be amended based on (1) the large amount of new information available from the more than 7 years of groundwater monitoring data gathered at Parcel B, including the detection of chromium VI and mercury in groundwater, and (2) changes in the toxicity estimates and exposure assumptions for VOCs since the ROD was prepared. Concentrations of VOCs in the area of IR-10 were found to be an order of magnitude higher than was known when the ROD was prepared. VOCs are now considered more toxic via the inhalation pathway than they were when the ROD was prepared. Consequently, intrusion of VOC vapors into buildings is a more significant human health risk. In particular, the groundwater remedy in the original ROD did not identify the VOC plume at IR-10 as requiring remediation. However, this plume may pose a much greater risk than was estimated in the original ROD. The original ROD did not contain any active remediation options to address the cleanup of VOCs in groundwater.

The Navy has investigated the area of IR-10 in considerable detail since the original ROD was prepared. The Navy installed more than 25 new groundwater monitoring wells in the area of IR-10 and conducted treatability studies to investigate methods to clean up the soil and groundwater. Treatability studies using soil vapor extraction (SVE) to remove VOCs from the unsaturated zone and injection of zero-valent iron (ZVI) to destroy VOCs in groundwater were successfully implemented at the IR-10 VOC plume. The TMSRA considered these and other remediation options to address the potential inhalation risks posed by VOCs that remain in soil and groundwater at IR-10.

Similar to the discussion above for soil, the updated site information and results from the remedial actions completed at Parcel B indicated the need to reassess remediation alternatives selected in the 1997 ROD. The original remedy would not be protective of human health and the environment based on the updated information about the site and on the revisions to human health toxicity criteria and exposure assumptions. The following is a summary of the reevaluation of the original remedy against the two threshold and five balancing criteria. Section 6.0 of the TMSRA presents a more detailed discussion, including a comparison of the original remedy to other alternatives developed to address the updated site information.

Original Groundwater Remedy

Protectiveness – the original remedy would not be considered protective because the VOCs in groundwater pose an unacceptable risk for potential vapor intrusion into buildings. The original remedy did not include institutional controls to limit access to buildings located above groundwater that contains VOCs.

Compliance with ARARs – the original remedy would meet the ARARs identified in this amended ROD.

Long-term effectiveness – the original remedy would rank as poor based on the magnitude of remaining potential risks posed by VOCs.

Reduction of toxicity, mobility, and volume through treatment – the original remedy did not contain any treatment component and, therefore, would rank as poor for this criterion.

Short-term effectiveness – the original remedy included only groundwater monitoring and would rank as excellent based on the minimal and controllable exposure to workers during monitoring.

Implementability – the original remedy would rank as excellent based on the routine nature of groundwater monitoring.

Cost – the original remedy would rank as poor based on the higher cost required (about \$8 million to date versus the ROD estimate of \$3.6 million); groundwater monitoring costs would continue to be incurred into the future. Total cost for full implementation would likely total more than \$10 million.

Overall, the reevaluation of the original remedy would result in a determination of “not protective” based on lack of adequate protectiveness.

In summary, the remedy for groundwater selected in the original ROD needs to be expanded to account for the increased potential risk from VOCs in groundwater and to provide remediation alternatives to address this risk. The amended ROD incorporates modifications to the remedy for groundwater soil to support additional remedial actions that will address remaining risks.

1.3.3 Shoreline

Potential ecological risk to aquatic receptors along the shoreline of Parcel B was not evaluated in the original ROD. The TMSRA included a SLERA to evaluate risks to aquatic receptors, and the TMSRA evaluated remediation alternatives to address these risks. The SLERA concluded that a variety of organic and inorganic chemicals in sediment along the shoreline and mercury in groundwater at IR-26 pose a potential unacceptable risk to aquatic receptors. The ROD needs to be amended to address potential ecological risks.

1.3.4 Radiological

Radiological contamination was not addressed by the original ROD; however, radiological contamination is present at Parcel B. The ROD needs to be amended to memorialize the methods and cleanup goals for radiological contaminants that are being addressed by the basewide radiological removal action. The radiological addendum to the TMSRA evaluated remediation alternatives for the radiological contamination (Tetra Tech EC, Inc. [\[TTEC\] 2008a](#)).

1.4 DOCUMENT ORGANIZATION

This amended ROD is organized into 15 sections. After this introduction, this amended ROD includes the following sections:

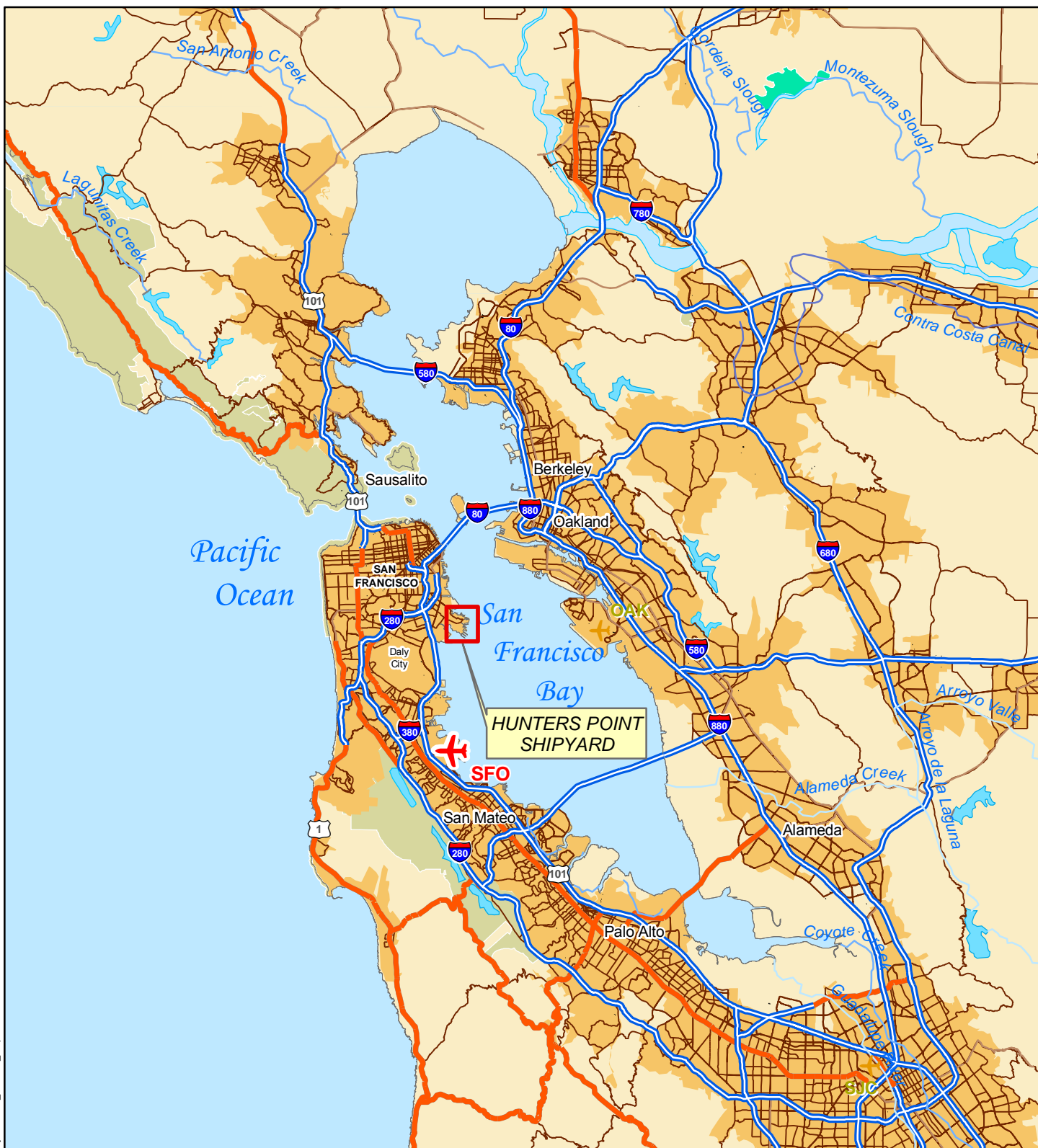
- **Section 2.0, Site History and Enforcement Activities.** This section provides information on the history of Parcel B since the 1997 ROD was signed including: boundary changes, investigations, removal and remedial actions, and regulatory actions.
- **Section 3.0, Community Participation.** This section discusses the community participation activities for Parcel B since the 1997 ROD and summarizes activities conducted related to the original 1997 ROD.
- **Section 4.0, Scope and Role of the Response Action.** This section describes how the amended ROD for Parcel B relates to the response actions at the other parcels at HPS.
- **Section 5.0, Site Characteristics.** This section summarizes information on the physical features, ecology, geology, hydrogeology, and the nature and extent of contamination in soil and groundwater at Parcel B, with a focus on new information gained since the 1997 ROD was signed.
- **Section 6.0, Current and Potential Future Site and Resource Uses.** This section discusses (1) current and reasonably anticipated future land uses, and (2) current and potential groundwater and surface water uses.
- **Section 7.0, Summary of Site Risks.** This section summarizes the revised HHRA and the SLERA conducted at Parcel B to evaluate potential risks to human health and the environment.
- **Section 8.0, Amended Remedial Action Objectives.** This section summarizes the amended remedial action objectives for Parcel B based on the future site use and the results of the HHRA and SLERA.
- **Section 9.0, Description of Amended Remedial Alternatives.** This section describes the amended cleanup alternatives developed for soil, groundwater, and structures at Parcel B.
- **Section 10.0, Comparative Analysis of Amended Remedial Alternatives.** This section summarizes the comparative analysis that was conducted to evaluate the relative performance of each amended remedial alternative in relation to the nine criteria outlined in CERCLA.
- **Section 11.0, Principal Threat Waste.** This section discusses the principal threat wastes at Parcel B.
- **Section 12.0, Amended Selected Remedy.** This section summarizes the components of the selected remedial alternatives.

- **Section 13.0, Statutory Determinations.** This section provides a site-specific description of how the amended selected remedy satisfies the requirements of CERCLA § 121 and explains the 5-year review requirements for the amended selected remedy.
- **Section 14.0, Documentation of Significant Changes.** This section documents the significant changes in the amended selected remedy as compared with the proposed plan for Parcel B that was mailed to the public in June 2008.
- **Section 15.0, References.** This section lists the references used in this report.

Figures and tables are presented after the section in which they are first mentioned. Additionally, the following attachments provide supplemental information for this amended ROD:

- **Attachment A, Administrative Record Index.** This attachment provides an index of the administrative record specific to Parcel B.
- **Attachment B, Transcript from Public Meeting, Sign-in Sheet, and Public Notice.** This attachment provides a transcript from the public meeting on the proposed plan for Parcel B; and copies of the sign-in sheet and published public notice of the meeting.
- **Attachment C, Responsiveness Summary.** This attachment provides the Navy's responses to questions raised during the public comment period.

FIGURES



Location Map



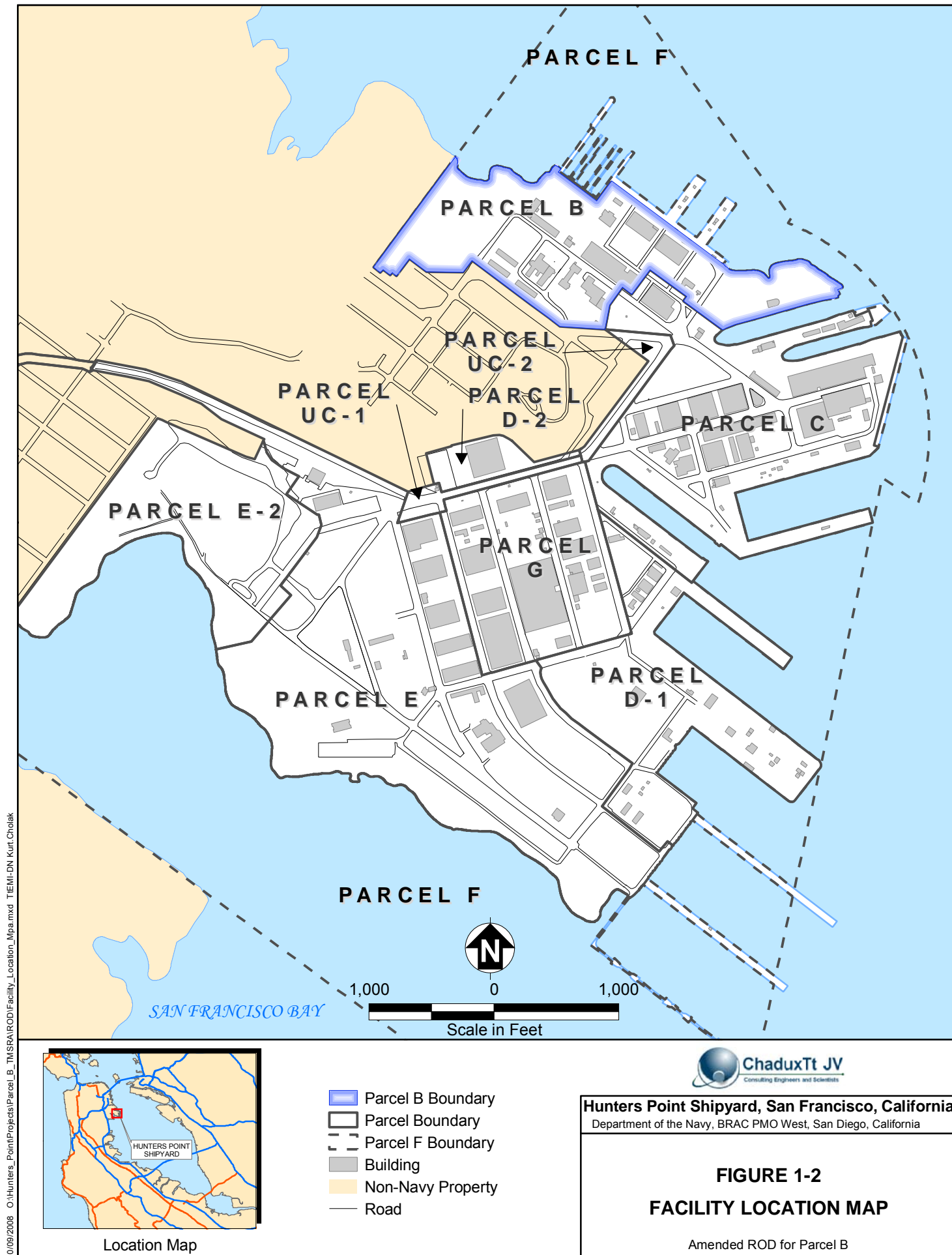
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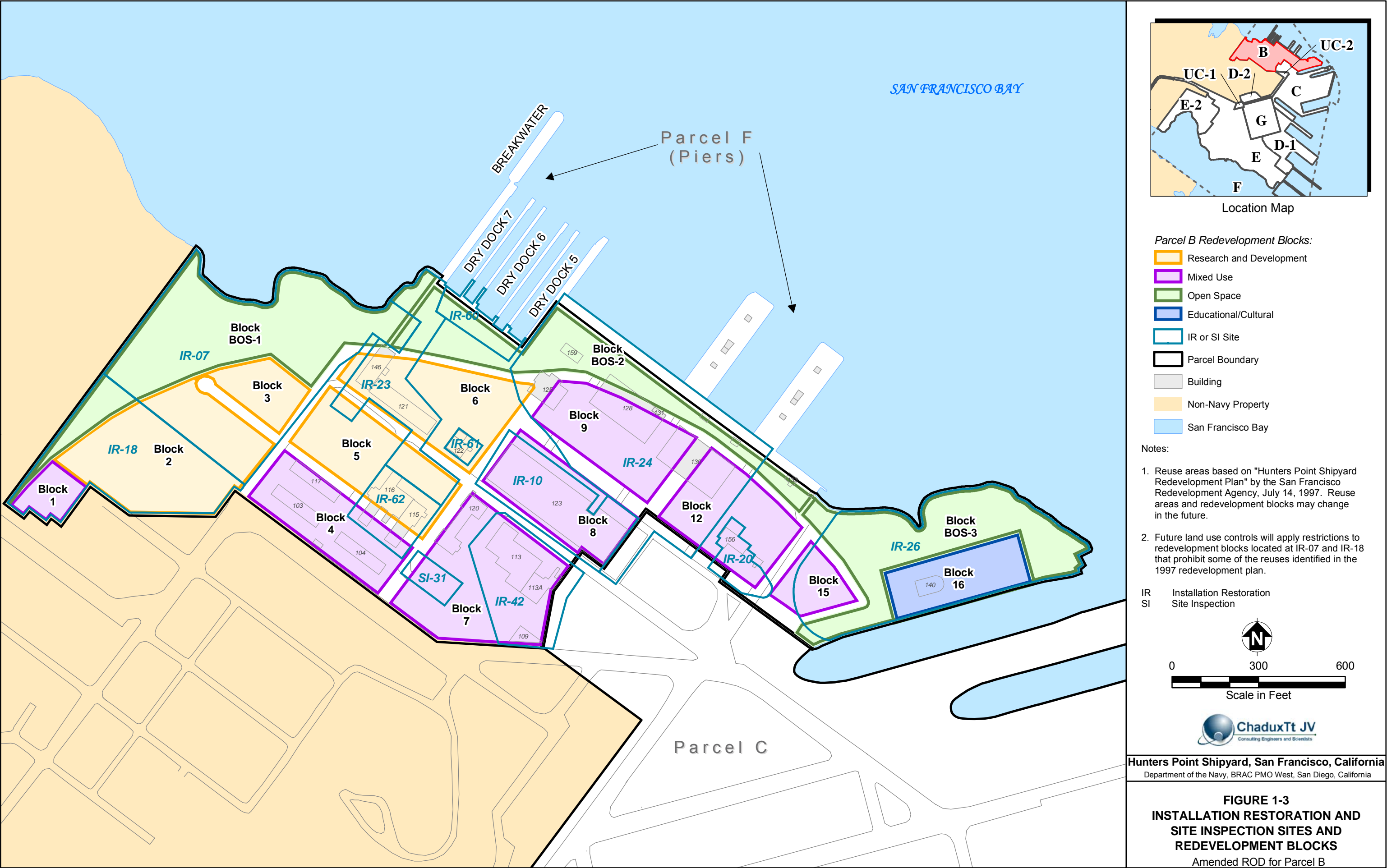


Hunters Point Shipyard, San Francisco, California
Department of the Navy, BRAC PMO West, San Diego, California

**FIGURE 1-1
HUNTERS POINT SHIPYARD
LOCATION MAP**

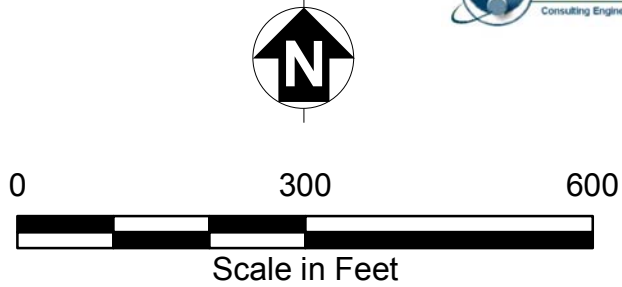
Amended ROD for Parcel B







- Planned Excavation, 1997 Record of Decision and Remedial Design
- Extent of Excavation
- Remedial Action Removals (July 1998 through December 2001)
- Petroleum Removals (July 2004 through January 2005)
- Building
- Parcel B Boundary
- Other Parcel Boundary
- Non-Navy Property
- San Francisco Bay
- Road



Hunters Point Shipyard, San Francisco, California
Department of the Navy, BRAC PMO West, San Diego, California

**FIGURE 1-4
PLANNED VERSUS ACTUAL
EXCAVATION AREAS**

Amended ROD for Parcel B

TABLE

TABLE 1-1: CERCLA CHRONOLOGY FOR PARCEL B

Parcel B Amended Record of Decision, Hunters Point Shipyard, San Francisco, California

CERCLA Process Step	Document	Date Completed
Preliminary Assessment/Site Inspection	Site Inspection Report	April 1994
Remedial Investigation	Remedial Investigation Report	June 1996
Feasibility Study	Feasibility Study Report	November 1996
Proposed Plan	Proposed Plan	October 1996
Record of Decision	ROD	October 1997
Explanation of Significant Differences	Explanation of Significant Differences (first)	August 1998
Remedial Design	Remedial Design Documents	August 1999
Remedial Action (Phase I)	Field Excavations	July 1998 to September 1999
Explanation of Significant Differences	Explanation of Significant Differences (second)	May 2000
Remedial Design Amendment	Remedial Design Amendment	February 2001
Remedial Action (Phase II)	Field Excavations	July 2000 to December 2001
Remedial Action (report)	Construction Summary Report	July 2008
Five-Year Review	First Five-Year Review of Remedial Actions Implemented at Hunters Point Shipyard	December 2003
TMSRA (update to Feasibility Study)	Technical Memorandum in Support of a ROD Amendment	December 2007
TMSRA Radiological Addendum	TMSRA Radiological Addendum	March 2008
Proposed Plan in Support of a ROD Amendment	Proposed Plan	June 2008
Five-Year Review	Second Five-Year Review of Remedial Actions Implemented at Hunters Point Shipyard	November 2008
Amended ROD	Amended ROD	January 2009
Remedial Design (IR-07 and IR-18)	Remedial Design	September 2009*
Remedial Action (IR-07 and IR-18)	Field Actions and Report	October 2010*
Remedial Design (rest of Parcel B)	Remedial Design	TBD
Remedial Action (rest of Parcel B)	Field Actions and Report	TBD

Notes: * Indicates a planned target date

CERCLA Comprehensive Environmental Response, Compensation, and Liability Act

ROD Record of decision

TBD To be determined

TMSRA Technical memorandum in support of a record of decision amendment

2.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

This section summarizes the history of HPS and Parcel B and describes the investigations and actions that have been conducted at Parcel B since the 1997 ROD.

2.1 SITE HISTORY

Hunters Point Shipyard consists of 866 acres: 420 acres on land, and 446 acres under water in San Francisco Bay. The Navy acquired ownership of the first portions of the shipyard property around 1939 and initially used the shipyard for shipbuilding, repair, and maintenance. After World War II, activities at Hunters Point Shipyard shifted to submarine maintenance and repair. However, the Navy continued to operate carrier overhaul and ship maintenance and repair facilities through the 1960s. Other significant activities after World War II included (1) potential disposal of decontamination materials from ships used during atomic weapons testing in the South Pacific during the 1950s that were decontaminated at the shipyard, (2) radiological decontamination of personnel, (3) storage of samples from atomic weapons testing, (4) radiological sample counting, (5) storage and disposal of radioluminescent devices, (6) non-destructive testing and gamma radiography, and (7) storage of low-level radioactive waste.

Hunters Point Shipyard was also the site of the Naval Radiological Defense Laboratory (NRDL) from the late 1940s until 1969. Initial tasks for the laboratory focused on the study of the effects of atomic weapons, including research into decontamination methods, personnel protection, and development of radiation detection instrumentation. Laboratory responsibilities grew to also include practical and applied research into the effects of radiation on living organisms and on natural and synthetic materials, in addition to continued decontamination experimentation. Hunters Point Shipyard was deactivated in 1974 and remained largely unused until 1976. Between 1976 and 1986, the Navy leased most of Hunters Point Shipyard to Triple A Machine Shop, Inc., a private ship repair company. The Navy resumed occupancy of Hunters Point Shipyard in 1987.

Currently, HPS is divided into ten parcels: B, C, D-1, D-2, E, E-2, F, G, UC-1, and UC-2. [Figure 1-2](#) identifies these parcels at HPS. In 1992, the Navy divided HPS into five contiguous parcels (A through E) to expedite remedial action and land reuse. In 1996, the Navy added a sixth parcel (Parcel F), also known as the offshore area. In September 2004, the Navy designated the landfill area in Parcel E as a separate parcel, Parcel E-2. In December 2004, the Navy transferred Parcel A to the San Francisco Redevelopment Agency. In July 2008, the Navy divided Parcel D into Parcels D-1, D-2, G, and UC-1. In December 2008, the Navy divided Parcel C into Parcels C and UC-2. [Figure 1-3](#) shows the IR and site inspection (SI) sites at Parcel B. Parcel B, which includes 59 acres on the north side of HPS, is the focus of this amended ROD.

Parcel B is bounded by other portions of Hunters Point Shipyard, private property, and San Francisco Bay. Most of Parcel B was formerly part of the industrial support area and was used for shipping, ship repair, training, barracks, and offices. Historically, Parcel B was investigated by IR site. Parcel B originally consisted of 16 IR sites, which were investigated during the remedial investigation, and two site inspection sites, which did not require further

investigation. Since that time, the boundaries of Parcel B have been redefined, and IR-06 and IR-25 have become part of Parcel C. Sites SI-45 (steam line system) and IR-50 (storm drain and sanitary sewer system) are facility-wide utility sites that traverse other sites. Site IR-51 is a facility-wide site that consists of buildings and areas that formerly housed electrical transformers. Furthermore, any base infrastructure at Parcel B that is considered to be “hanging” off seawalls and quay walls into the bay, such as piers, wharves, and dry dock side walls, is considered to be part of Parcel F. Parcel B is also divided into redevelopment blocks that have been assigned redevelopment block numbers to help identify areas of Parcel B that are associated with specific planned reuses (Figure 1-3). Reuse areas and redevelopment blocks may change in the future.

Parcel B Installation Restoration and Site Inspection Sites

Remedial Investigation Sites:

07	24	51
10	26	60
18	42	61
20	46	62
23	50	

Site Inspection Sites:

31	45
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*IR-06 and IR-25 moved to Parcel C

2.2 ACTIONS SINCE 1997 ROD

Actions since the October 1997 ROD include changes to the boundary of Parcel B, additional investigations, removal and remedial actions, treatability studies, and regulatory actions. Table 2-1 lists documents that summarize the post-ROD activities according to broad categories related to the soil remedy, groundwater remedy, treatability studies, or regulatory actions.

2.2.1 Changes in Parcel B Boundary

The boundary of Parcel B has changed twice since the October 1997 ROD. The first change affected the southeastern boundary with Parcel C. The Navy revised the boundary between Parcels B and C to consolidate the area subject to similar contamination and potential remedial action and include the area as part of Parcel C. This change moved IR-06 to Parcel C. The Navy documented the change in the boundary in a memorandum to the administrative record file on February 1, 2002 (Navy 2002). The adjustment of the parcel boundary to move IR-06 to Parcel C reduced the area of Parcel B from 63 to 59 acres.

The second change affected the southwestern boundary with the former Parcel A. Minor adjustments in the boundary in this area were made to ensure that soil contamination related to activities in Parcel B was contained within the boundary of Parcel B. The Navy documented this boundary adjustment in the finding of suitability to transfer documents for Parcel A (Tetra Tech 2004). The adjustment involved only a small fraction of an acre, and the area of Parcel B remained about 59 acres.

In this amended ROD, the boundary between Parcels B and F is considered the mean lower low water line. The Navy is preparing a memorandum to the administrative record file to document this definition. This memorandum will also document that the piers along the shoreline of Parcel B have been transferred into Parcel F (Figure 1-3).

2.2.2 History of Investigations

This section discusses investigations the Navy has conducted at Parcel B since the October 1997 ROD. Additional investigation also occurred during remedial actions as well as during treatability studies, and these activities are discussed separately in the succeeding sections. The resulting changes to the site characterization for soil and groundwater contamination at Parcel B are discussed in [Section 5.0](#).

Investigations at Parcel B since the 1997 ROD include the Historical Radiological Assessment, an investigation of the Bay Mud Aquitard and B-aquifer, a study of fill conditions at IR-07 and IR-18, an investigation into sediment contamination along the Parcel B shoreline, studies of ambient concentrations of nickel and manganese in soil, a soil gas investigation at IR-07 and IR-18, an investigation of VOCs in groundwater at the boundary of Parcels B and C, and a wetlands delineation assessment. More detailed descriptions of past investigations are included in Section 2.1 of the TMSRA ([ChaduxTt 2007](#)).

Historical Radiological Assessment. The HRA evaluated potential radiological contamination from use of general radioactive materials at HPS (Naval Sea Systems Command [\[NAVSEA\] 2004](#)). The HRA identified radiologically impacted areas at Parcel B. The term “radiologically impacted” is defined in the Historical Radiological Assessment as “an area, building, or piece of equipment that, under professional interpretation, has the distinct possibility of having residual radioactive material associated with it.” [Section 5.0](#) presents a summary of the nature and extent of radiological contamination at Parcel B.

Distribution of Bay Mud Aquitard and B-Aquifer Characterization. The Navy investigated the thickness and extent of the Bay Mud, which acts as an aquitard that separates the A- and B-aquifers, and characterized groundwater in the B-aquifer at Parcel B ([Tetra Tech 2001a](#)). The study found that the Bay Mud Aquitard separates the A- and B-aquifers or that the B-aquifer is absent in most of Parcel B. Lithologic results from the study are incorporated into the updated site characterization (see [Section 5.0](#)), and analytical results are included in the HHRA, which is Appendix A of the TMSRA ([ChaduxTt 2007](#)).

Fill Conditions Study at IR-07 and IR-18. The Navy studied the nature and extent of the debris fill at portions of IR-07 and IR-18 to delineate further the types and distribution of debris materials observed during remedial action excavations at these IR sites ([Tetra Tech 2003b](#)). The study documented the progressive filling of San Francisco Bay in the area of IR-07 and IR-18 from 1948 to 1972 and noted widespread distribution of low-quality fill with a high debris content. Debris included wood, asphalt, concrete, brick, metal, and other demolition-type debris, as well as sandblast grit from HPS operations. The study concluded that fill conditions at IR-07 and IR-18 vary greatly from the rest of Parcel B. Potential remedial actions considered for IR-07 and IR-18 account for the unique subsurface conditions in this area.

In addition, the Navy prepared an evaluation of the radiological history of IR-07 and IR-18, with an emphasis on the locations of potential radiologically impacted fill ([Navy 2008b](#)).

Shoreline Sediment Investigation. The Navy investigated the nature and extent of chemicals in sediments along the shoreline at IR-07 and IR-26 (Tetra Tech and Innovative Technical Solutions, Inc. [ITSI] 2004b). Sediment samples collected during this investigation are further evaluated in the SLERA, which is Appendix B of the TMSRA.

Nickel and Manganese in Soil Studies. The Navy studied nickel and manganese to further evaluate the nature of background concentrations of these metals in HPS soils. Ambient concentrations of a broad group of metals are summarized as Hunters Point ambient levels (HPAL) (PRC Environmental Management, Inc. [PRC] 1995). However, the unique geology at HPS, and especially the presence of rock types such as serpentinite, basalt, and chert, results in naturally higher concentrations of nickel and manganese. The Navy studied the distribution of nickel concentrations in soil across HPS and found a positive correlation among concentrations of nickel, magnesium, and cobalt. These correlations were quantified as regression equations for (1) nickel versus magnesium, and (2) nickel versus cobalt, and these regression equations replaced a single, numerical value for the HPAL for nickel (Tetra Tech 1999). The Navy also studied the distribution of manganese in soil across HPS (Tetra Tech 2001d, 2001e, 2001g). The Navy agreed to continue to use the original HPAL for manganese (1,431 milligrams per kilogram [mg/kg]). HPALs, including the regression equations for the HPAL for nickel, were considered during the HHRA.

Metals Concentrations in Franciscan Bedrock Outcrops Study. The Navy studied the ambient concentrations of metals in bedrock and bedrock-derived soil from three nonindustrial sites in San Francisco (Tetra Tech and ITSI 2004a). The geologic setting of these three sites is similar to HPS and contains serpentinite or chert and basalt bedrock typical of the Franciscan Complex. The study found elevated concentrations of arsenic, iron, and manganese associated with chert bedrock and elevated nickel concentrations associated with serpentinite. The chemical composition of soil at the three sites was found to be similar to the chemical composition of rock. Results from this study supported the assessment of the ubiquitous nature of metals in bedrock-derived fill at Parcel B.

Soil Gas Investigation at IR-07 and IR-18. The Navy investigated IR-07 and IR-18 to evaluate whether the fill is producing methane and other VOCs (SES-TECH 2005). The study consisted of active soil gas measurements across the IR-07 and IR-18 areas. The study found one area in the eastern portion of IR-07 where concentrations of methane and VOCs exceeded 5 percent methane (by volume in air) or 1,000 parts per million by volume VOCs. The Navy decided to conduct a time-critical removal action (TCRA) to address the methane source area (SES-TECH 2008).

VOCs in Groundwater Investigation at the Boundary of Parcels B and C. The Navy investigated the area near Building 134 along the boundary between Parcels B and C to further delineate the extent of VOC contamination in groundwater in the A-aquifer (CE2 Corporation [CE2] 2005). This VOC-contaminated area in Parcel C is termed remedial unit (RU)-C5. The investigation found (1) that dissolved-phase VOCs in groundwater in the shallow A-aquifer have migrated from Parcel C to Parcel B, but concentrations at Parcel B were below maximum contaminant levels (MCL), (2) that there was no indication of dense nonaqueous-phase liquids (DNAPL) in the aquifer at Parcel B, and (3) that there was no evidence for migration of DNAPLs onto Parcel B from Parcel C.

Wetlands Delineation and Functions and Values Assessment. The Navy delineated wetland areas at Parcel B and identified the functions and values of the wetlands during 2001 and 2002 (Tetra Tech 2003c). The Navy conducted the wetlands delineation on October 1, 2001, and the functions and values assessment on December 3, 2001. A confirmatory functions and values assessment was conducted on April 10, 2002. The wetlands delineation followed technical guidelines and methods described in the U.S. Army Corps of Engineers (USACE) wetland delineation manual (USACE 1987a). The functions and values assessment followed the methods and guidance outlined in the USACE wetland evaluation technique technical reports (USACE 1987b).

2.2.3 History of Removal and Remedial Actions

The 1997 ROD identified soil excavation and disposal and groundwater monitoring as major components of the remedy for Parcel B (Navy 1997). The following sections discuss these remedial actions and other, related removal actions by medium.

2.2.3.1 History of Soil Actions

The 1997 ROD identified excavation of contaminated soil, off-site disposal, and placement of clean backfill as the primary components of the selected remedy. The Navy conducted a series of excavations at Parcel B to remove contaminated soil, including (1) pre-ROD exploratory excavations in 1996, (2) remedial action excavations from 1998 to 2001, and (3) a removal action to excavate soil contaminated by fuel-related compounds in 2004. Figure 1-4 shows the locations of these previous excavations at Parcel B; additional details about the excavations are provided below.

Exploratory Excavations. The Navy conducted exploratory excavations at 18 sites across HPS between July 1996 and January 1997 (IT Corporation [IT Corp.] 1999). These excavations included removal actions at five sites at Parcel B. The volume of the excavations was limited during this initial, exploratory phase. A total of approximately 1,700 cubic yards of soil was removed from the five sites at Parcel B.

Remedial Actions. The Navy conducted remedial actions for soil in two phases: 1998 to 1999, and 2000 to 2001. The Navy excavated about 54,400 cubic yards of soil from 84 areas at Parcel B between July 1998 and September 1999. The remedial design (RD) (Tetra Tech and Morrison Knudsen Corporation 1999a) for this phase included confirmation sampling after an excavation had been completed. However, the excavations failed to remove contaminants to below cleanup goals for soil in many excavations, and the soil remedial action paused in September 1999 while the Navy reevaluated the cleanup goals presented in the 1997 ROD (see Section 2.2.5 for more discussion).

The Navy summarized revised cleanup goals in the May 2000 ESD (Navy 2000). Between May 2000 and December 2001, the Navy excavated and disposed of off site approximately 47,200 cubic yards of soil from 43 areas, some of which had been originally excavated from 1998 to 1999. This second phase of excavation followed an amended RD that included pre-excavation sampling to delineate excavation areas (Tetra Tech 2001b). New excavation areas were opened during the second phase, and some excavations begun in 1998 to 1999 were reopened. Similar to

the first phase, the second phase of excavations did not remove all contaminants to below cleanup levels for soil, and the remedial action was halted for reevaluation. The Navy excavated a total of 101,600 cubic yards of soil from 106 areas at Parcel B during both phases, compared with the estimate of 38,000 cubic yards at 85 areas in the 1997 ROD. Details of the remedial action excavations are presented in the construction summary report ([ChaduxTt 2008](#)).

The Navy encountered black sandblast grit at Excavation 7-4 in 2001 and analyzed this material for radioactivity. Minimal radioactivity was detected in the field, and laboratory analysis of a sample found only naturally occurring radium. In a previous study, EPA radiological experts performed an independent evaluation and confirmed that the radiation levels were only slightly above background ([National Air and Radiation Environmental Laboratory 1994](#)).

Excavations to Remove Fuel-Related Contamination. The Navy removed about 29,000 cubic yards of soil from 12 excavations at sites across HPS between July 2004 and January 2005 as part of its total petroleum hydrocarbons (TPH) program to remove soil that was contaminated by fuel-related products ([TPA-CKY Joint Venture 2005](#)). The Navy removed and disposed off site about 9,800 cubic yards of soil from two areas at Parcel B during this action.

Time-Critical Removal Actions. The Navy is conducting three TCRA's to address (1) radiological contamination basewide, including Parcel B, (2) methane at IR-07, and (3) mercury at IR-26.

- TCRA for Radionuclides.** The Navy is conducting a TCRA to address potential radioactive contamination in buildings, fill areas, former building sites, storm drains, and sanitary sewers at Parcel B. The Final Action Memorandum for the Base-wide Radiological Removal Action describes the need for the response action as well as the cleanup criteria ([Navy 2006](#)). The TCRA involves (1) surveying structures, former building sites, and radiologically impacted areas; (2) decontaminating (and demolishing if necessary) buildings and former building sites; (3) excavating radiologically impacted storm drain and sanitary sewer lines and other areas, as necessary; and (4) screening, separating, and disposing of radioactive anomalies and contaminated excavated materials at an off-site, low-level radioactive waste facility. Activities for the TCRA at Parcel B began in 2006. The Navy excavated more than 59,400 cubic yards of material and disposed of about 3,800 cubic yards off site as low-level radioactive waste. The Navy demolished Building 157 as part of the TCRA and removed more than 22,900 linear feet of storm drain and sanitary sewer lines. The Navy also investigated Building 140 and its associated channels, pumps, and pipes for radiological contamination. All information related to each radiologically impacted area at Parcel B will be summarized in individual final status survey reports or the removal action completion report (RACR), which will be reviewed and approved by the BCT and the California Department of Public Health (CDPH).

- **TCRA for Methane at IR-07.** The Navy is conducting a TCRA to address methane detected in soil gas samples in the eastern portion of IR-07. The Navy excavated and screened about 12,000 cubic yards of soil, including about 2,500 cubic yards of construction and demolition debris during August through October 2008. The TCRA found that debris was confined to a layer that extended to about 6 feet bgs and was above the water table, which was at about 18 feet bgs at the excavation site. Therefore, it is not likely that debris placed by the Navy as fill is the source of methane. Material below 6 feet bgs was predominantly clean, engineered fill without debris or staining. Excavation continued to the native Bay Mud at a depth of 27 feet bgs. A layer of material at the top of the Bay Mud was observed to be highly organic and odiferous. An unmarked polyvinyl chloride sewer line, apparently installed after the Navy's presence at HPS ended in 1974, also was found during the excavation; a portion of the line was removed and the ends were capped. Both the native organic material and the sewer line may have been sources of methane; debris used as fill located above the water table does not appear to be a likely source of methane.
- **TCRA for Mercury at IR-26.** The Navy is conducting a TCRA to address the source of mercury in groundwater at IR-26 (near wells IR26MW47A and IR26MW49A). The Navy removed about 6,000 cubic yards of soil beneath and adjacent to former Excavation EE-05 during September through October 2008. The TCRA found high concentrations of mercury in soil samples collected near well IR26MW47A. These soils were the likely source of the elevated concentrations of mercury measured in groundwater samples collected at wells IR26MW47A and IR26MW49A.

2.2.3.2 History of Groundwater Actions

The 1997 ROD identified groundwater monitoring, lining storm drains, and removing steam and fuel lines as primary components of the selected remedy. The Navy developed the remedial action monitoring program (RAMP) to describe the groundwater monitoring program for Parcel B. The Navy investigated storm drains as potential conduits for groundwater migration and excavated steam and fuel lines. In addition, the Navy investigated the extent of chromium VI in groundwater at IR-10 during implementation of the RAMP. The following sections present details of the RAMP and these related removals and investigations.

Remedial Action Monitoring Program. The Navy prepared the RAMP ([Tetra Tech and Morrison Knudsen Corporation 1999b](#)) as part of the RD in 1999. In accordance with the requirements of the 1997 ROD, the RAMP established monitoring locations (1) along the point of compliance (POC), which was defined as the high-tide line of the tidally influenced zone, and (2) at positions upgradient from the POC (sentinel wells). The RAMP originally identified 24 wells for groundwater monitoring.

In addition to the original RAMP wells, the Navy incorporated other wells during the monitoring program: (1) additional wells in and around the IR-10 VOC plume, (2) supplemental characterization wells near Excavation EE-05 in IR-26, and (3) a well to monitor chromium VI. All wells are sampled quarterly except for the sentinel wells, which are sampled semiannually. The Navy currently monitors 36 wells in the RAMP and has collected samples for 36 quarters as of December 2008.

Chromium VI Delineation Study. The Navy installed 10 temporary monitoring wells in the A-aquifer in 2002 at locations down-, cross-, and up-gradient from well IR10MW12A to monitor concentrations of chromium VI in groundwater in the area of this well. The study concluded that downward migration of chromium VI was unlikely based on the low hydraulic conductivity of the clay, the large available surface area for adsorption, and the high potential for reduction of chromium VI to chromium III by organic material, iron, and manganese contained in the clay. The study found the extent of chromium VI was limited to the immediate area around well IR10MW12A.

Storm Drain Infiltration Studies. The Navy studied potential infiltration of groundwater into storm drain lines at Parcel B in October 1997 (Tetra Tech 1998). After review and comments by the BCT, the Navy conducted a focused investigation of two reaches of the storm drain in Parcel B between April 1999 and November 2000 (Tetra Tech 2001c). The two reaches investigated were storm water Basins 2 and 4; both were below the groundwater table and intersected contaminant plumes (as mapped at that time). Basin 2 is located in eastern IR-07, north of Building 146; Basin 4 is located in eastern IR-24, roughly between Buildings 134 and 130. Overall, the study recommended no further action be taken related to the storm drains, except for continued monitoring of a group of RAMP wells.

Groundwater Evaluation Technical Memorandum. After 2 years of groundwater monitoring under the RAMP, the Navy prepared a technical memorandum (Tetra Tech 2001f) to reevaluate the monitoring program based on the groundwater data collected by the RAMP and earlier investigations and to recommend revisions to the RAMP. The Navy and the BCT discussed the recommendations in the technical memorandum but did not agree on modifications to the RAMP. The technical memorandum was not finalized and, although wells were added to the RAMP, the RAMP document was not changed.

2.2.4 History of Treatability Studies

The Navy conducted treatability studies at IR-10 using SVE and injection of ZVI to evaluate the effectiveness of these techniques to clean up VOCs in soil and groundwater located beneath the northwestern portion of Building 123. The Navy also conducted a treatability study using sequential anaerobic and aerobic bioremediation at nearby Building 134 in Parcel C for similar contaminants (VOCs) in groundwater. The following sections briefly describe these studies.

Soil Vapor Extraction. The Navy tested a pilot-scale SVE system at Building 123 in IR-10 between December 2000 and June 2001 (IT Corp. 2002). The test used a trailer-mounted blower system and granular activated carbon for off-gas cleanup. Testing showed significant removal of VOCs, although VOC concentrations rebounded after the SVE system was shut down. The Navy confirmed the effectiveness of the pilot test by collecting soil samples in the treatment area during September 2002 (Tetra Tech 2003d). Analysis of these soil samples indicated that VOC concentrations were reduced about 80 percent during test operations.

The Navy expanded the pilot-scale SVE system at Building 123 during January through May 2005 (ITSI 2006). The SVE system operated from June through September 2005, when the system was shut down for rebound monitoring through December 2005. Vapor monitoring indicated that VOCs were reduced to below detection levels in 49 of 51 monitoring wells. The treatability study

report recommended that the system be expanded to include additional vapor extraction wells and operated to remove additional VOCs. The system remains in place and operation of the SVE system is incorporated into the amended remedial actions discussed in this amended ROD.

Zero-Valent Iron Injection. The Navy evaluated the effectiveness of ZVI as a means to clean up chlorinated VOCs in groundwater at IR-10. The Navy conducted a pilot test using ZVI at Building 123 between September 2003 and March 2004 (Engineering/Remediation Resources Group, Inc. [ERRG] and URS Corporation [URS] 2004). The test included injection of a slurry of about 130,500 pounds of ZVI powder into the A-aquifer. Results from groundwater monitoring indicated about a 50-percent reduction in the mean concentration of trichloroethene. In some individual wells, trichloroethene concentrations dropped from hundreds of milligrams per liter to below detection limits. Monitoring the groundwater in the test area continues under the RAMP. The results of this treatability study were the basis for incorporating ZVI injection in the amended remedial alternatives.

Sequential Anaerobic and Aerobic Bioremediation. The Navy tested a pilot-scale system for sequential anaerobic and aerobic bioremediation at Building 134 in Parcel C from April 2004 through June 2005 (Shaw Environmental, Inc. [Shaw] 2005). The anaerobic stage of the test continued through December 2004 and included injection of lactate and hydrogen to stimulate biological breakdown of chlorinated solvents in groundwater in the A-aquifer. The data indicate that the indigenous organisms are capable of complete degradation of the chlorinated ethenes to non-toxic ethene. The results of this treatability study supported incorporating lactate injection in the amended remedial alternatives.

2.2.5 History of Regulatory Actions

This section briefly describes the 1997 ROD and the two subsequent ESDs that apply to Parcel B. This section also summarizes the first 5-year review for HPS, which focused on Parcel B.

2.2.5.1 October 1997 ROD

The Navy and the regulatory agencies signed the ROD for Parcel B, dated October 7, 1997, on October 9, 1997 (Navy 1997). The ROD addressed both soil and groundwater contaminated by CERCLA hazardous substances at Parcel B. The ROD also addressed remediation of areas where CERCLA hazardous substances are commingled with petroleum hydrocarbons. Areas that contained only petroleum hydrocarbons, which are not hazardous substances as defined by CERCLA, are addressed in a separate petroleum hydrocarbon corrective action plan under the oversight of the San Francisco Bay Regional Water Quality Control Board (Water Board) (Shaw 2008).

The Navy selected excavation and off-site disposal as the remedy for contaminated soil at Parcel B. The Navy selected groundwater monitoring, lining of storm drains, and removal of steam and fuel lines as primary components of the selected remedy for groundwater. The major components of the remedy are listed in Section 1.2.

Two subsequent changes were made to the soil portion of the selected remedy in the October 1997 ROD for Parcel B. These changes were described in the ESDs dated August 24, 1998, and May 4, 2000.

2.2.5.2 August 1998 ESD

The first ESD to the Parcel B ROD was dated August 24, 1998, and was signed by the Navy and the regulatory agencies on October 28, 1998 (Navy 1998). This ESD revised the selected remedy to require excavation of contaminated soils to a 10^{-6} cancer risk (residential) or to a maximum depth of 10 feet bgs, instead of to groundwater as required by the 1997 ROD.

2.2.5.3 May 2000 ESD

The second ESD to the Parcel B ROD was dated May 4, 2000, and was signed by the Navy and the regulatory agencies on May 9, 2000 (Navy 2000). The May 2000 ESD updated the cleanup goals for soil presented in Table 8 of the Parcel B ROD to incorporate (1) the methodologies and toxicological data from EPA's 1999 preliminary remediation goals (PRG) into the site-specific cleanup goals for Parcel B, including adjustments by the Navy to incorporate the produce uptake pathway, and (2) revised ambient levels for nickel.

2.2.5.4 First Five-Year Review

The Navy summarized the first 5-year review for HPS in a report dated December 10, 2003 (Tetra Tech 2003e). The 5-year review encompassed all of HPS but focused on Parcel B because remedial actions had not been implemented yet at the other parcels at HPS.

The purpose of the 5-year review was to evaluate implementation and performance of the remedy and to assess whether the remedy is or will be protective of human health and the environment.

Protectiveness — Soil. At the time of the review, the remedy for soil at Parcel B was determined to be protective of human health and the environment because exposure pathways that could result in unacceptable risks were controlled through extensive soil excavation and the use of fencing, locked gates, warning signs, and secured buildings. The review recommended that, for the soil remedy to be protective in the long term, (1) the HHRA should be updated using new toxicological data and methodologies, (2) potential ecological risks to aquatic receptors should be evaluated, and (3) the selected remedy should be modified to address remaining areas of contamination. This amended ROD is intended to modify the selected remedy to ensure that the final soil remedy implemented at Parcel B will be protective of human health and the environment in the long term.

Recommendations for the Soil Remedy. The 5-year review identified the following actions related to the soil remedy. Each bullet also indicates how these items are addressed in this amended ROD (shown in [brackets] as sub-bullets).

- Subsurface conditions should be further evaluated at IR-07 and IR-18, the conceptual model should be updated, and a site-specific approach should be developed as part of the process to amend the Parcel B ROD.

- [The amended ROD includes remediation alternatives to address the debris fill area at IR-07 and IR-18 (Redevelopment Blocks 2, 3, and BOS-1).]
- Potential need for remedial action at the shoreline near IR-07 and IR-26 should be evaluated during the process to amend the ROD.
 - [The alternatives in the amended ROD include remediation of the shoreline at IR-07 and IR-26 (Redevelopment Blocks BOS-1 and BOS-3).]
- Potential ecological risk to aquatic receptors from Parcel B contaminants should be evaluated.
 - [The amended ROD includes remediation alternatives to address the shoreline area.]
- Effectiveness of the SVE system at IR-10 should be further evaluated during the process to amend the ROD and included in an amended ROD if SVE is selected as a remedy for VOC-contaminated soil. If SVE is not selected as the remedy, remaining portions of IR-10 that have not been excavated will need to be addressed.
 - [The amended ROD includes remediation alternatives that include SVE for VOCs in soil at IR-10. The amended ROD also contains remediation alternatives to address metals concentrations that exist in soil in the same area at IR-10 that will not be treated by SVE.]
- Remedial action objectives (RAO) for soil and remedial action alternatives should be reevaluated during the process to amend the ROD to address higher and more variable levels of ambient metals.
 - [The RAOs in the amended ROD account for higher and more variable concentrations of ambient metals.]
- The human health risk assessment (HHRA) should be updated with new toxicological data and calculate cumulative risk as part of the process to amend the ROD.
 - [The updated HHRA incorporated new toxicological data and provided information about total risk. The remediation alternatives addressed in the amended ROD address the total risk from chemicals in soil.]
- Enforceable land-use restrictions need to be developed before the remedy is complete.
 - [The amended ROD contains more detailed information on institutional controls.]

Protectiveness — Groundwater. At the time of the review, the groundwater remedy at Parcel B was determined to be protective of human health and the environment because the RAMP safeguards aquatic life in the bay and addresses potential risk to future occupants of Parcel B buildings. The review recommended that, for the groundwater remedy to be protective in the long term, (1) the HHRA and groundwater trigger levels should be updated, (2) potential ecological risk to aquatic receptors should be evaluated, (3) the selected remedy should be modified to address VOC contamination, (4) a POC well and other characterization wells should be installed at IR-07, and (5) appropriate responses to incidents where trigger levels are exceeded should continue to be implemented.

Recommendations for the Groundwater Remedy. The 5-year review identified the following actions related to the groundwater remedy. Each bullet also indicates how these items are addressed this amended ROD (shown in [brackets] as sub-bullets).

- Refinement of Parcel B groundwater monitoring should be discussed with the regulatory agencies and detailed in the basewide monitoring plan, which encompasses groundwater monitoring for Parcels B, C, D, E, and E-2.
 - [The remediation alternatives in the amended ROD discuss groundwater monitoring options for Parcel B.]
- Trigger levels should be reevaluated.
 - [Appendix I of the TMSRA contained recommendations for revised trigger levels. The amended ROD incorporates these trigger levels.]
- Ambient metals in groundwater may be reevaluated, if necessary, to ensure protectiveness of human health and the environment.
 - [Ambient levels of metals in groundwater were considered in the risk assessments, but were not revised.]
- The HHRA should be updated with new toxicological data and calculate cumulative risk as part of the process to amend the ROD.
 - [The updated HHRA incorporated new toxicological data and provided information about total risk. The remediation alternatives included in the amended ROD address the risk from chemicals in groundwater.]
- Potential ecological risk to aquatic receptors from Parcel B contaminants should be evaluated.
 - [The amended ROD includes remediation alternatives to address the shoreline area.]
- A POC well and characterization wells should be installed at IR-07.
 - [POC well IR07MWS-4 and post-remedial action wells IR07MW21A1, IR07MW24A, IR07MW25A, and IR07MW26A were reinstalled in March 2004, and the risk assessments used data from these wells. The amended ROD contains remediation alternatives to address the risk from chemicals in groundwater.]

- Effectiveness of SVE and ZVI treatability studies should be evaluated and included in an amended ROD if either is selected as a remedy for VOC-contaminated groundwater.
 - [The TMSRA evaluated SVE and ZVI treatability studies, and the amended ROD includes these technologies in remediation alternatives.]
- Enforceable land-use restrictions need to be developed before the remedy is complete.
 - [The amended ROD contains more detailed information on institutional controls.]

Radiological Issues and Recommendations.

- The first 5-year review indicated that the amended ROD should memorialize the methods and cleanup goals for radiological contaminants being addressed by the basewide radiological removal action.
- [Radiological issues were identified in the HRA ([NAVSEA 2004](#)) and were addressed in the radiological addendum to the TMSRA ([TtEC 2008a](#)). The amended ROD includes remediation alternatives to address radiological contamination.]

2.2.5.5 Second Five-Year Review

The second 5-year review builds on the first review completed in 2003 and focuses on Parcel B where remedial actions have been implemented. The second 5-year review was completed in 2008 ([Jonas and Associates 2008](#)). The second 5-year review describes the need to amend the remedy for Parcel B and discusses the revised remedial alternatives presented in the TMSRA and the radiological addendum to the TMSRA (which are further developed in this amended ROD).

TABLE

TABLE 2-1: HISTORY OF INVESTIGATIONS SINCE ROD

Parcel B Amended Record of Decision, Hunters Point Shipyard, San Francisco, California

Report Date	Title	Author	Activity Description and Effect on the 1997 ROD
Soil Remedy-Related Documents			
8/4/99	Nickel Screening and Implementation Plan	Tetra Tech	Evaluated ambient concentrations of nickel in soil across HPS; basis for change in nickel cleanup level included in the 2000 ESD
8/19/99	Remedial Design Documents	Tetra Tech and MK	Guided first phase of soil excavations from July 1998 to September 1999
2/20/01	Remedial Design Documents Amendment	Tetra Tech	Guided second phase of soil excavations from July 2000 to December 2001
3/28/03	Interpretation of Fill Conditions at IR-07 and IR-18	Tetra Tech	Characterized subsurface conditions using soil borings, geophysics, and historical aerial photographs; together with observations during remedial actions; this report established the nature of fill at IR-07 and IR-18
8/14/03	Wetlands Delineation and Functions and Values Assessment	Tetra Tech	Delineated the small wetland located near the IR-07 shoreline
3/17/04	Metals Concentrations in Franciscan Bedrock Outcrops	Tetra Tech and ITSI	Characterized metals concentrations in bedrock at off-site locations; supports the assessment of metals in bedrock-derived fill
3/23/04	Shoreline Characterization Technical Memorandum	Tetra Tech	Characterized shoreline sediments at IR-07 and IR-26; basis for distribution of chemicals in shoreline sediment and source of data used in the SLERA
8/31/04	Historical Radiological Assessment, Volume II, Use of General Radioactive Materials, 1939 to 2003	NAVSEA	Evaluated potential radiological contamination from use of general radioactive materials across HPS; established radiologically impacted areas at Parcel B
9/23/05	Soil Gas Survey Technical Memorandum	SES-TECH	Soil gas survey for evaluation of methane and total volatile organic compounds to assess nature and extent of concentrations in soil gas at IR-07 and IR-18; basis for presence of methane at IR-07
7/25/08	Construction Summary Report	ChaduxTt	Summary of 106 soil excavations conducted during phases I and II of remedial action (combines draft report and addendum)
11/08	Removal Action Completion Report for TCRA for Mercury at IR-26	Insight Environmental	Investigated mercury source to groundwater at IR-26; excavated more than 6,000 cubic yards of soil. Found and removed high mercury concentrations in soil near well IR26MW47A.
1/09	Removal Action Completion Report for TCRA for Methane at IR-07	Navy	Investigated methane source at IR-07; excavated more than 12,000 cubic yards of material to a depth of 27 feet. Found native materials or an unmarked sewer line as potential methane sources.

TABLE 2-1: HISTORY OF INVESTIGATIONS SINCE ROD (CONTINUED)

Parcel B Amended Record of Decision, Hunters Point Shipyard, San Francisco, California

Report Date	Title	Author	Activity Description and Effect on the 1997 ROD
Soil Remedy-Related Documents (Continued)			
Spring 2009	Removal Action Completion Report for TCRA for Radionuclides	Navy	Surveyed structures, former building sites, and radiologically impacted areas; decontaminated (and demolished) buildings and former building sites; excavated radiologically impacted storm drain and sanitary sewer lines; screened, separated, and disposed of radioactive anomalies and contaminated excavated materials at an off-site low-level radioactive waste facility.
Groundwater Remedy-Related Documents			
8/19/99	Remedial Action Monitoring Plan	Tetra Tech and MK	Guided groundwater monitoring program
2/19/01	Distribution of the Bay Mud Aquitard and Characterization of the B-Aquifer at Parcel B	Tetra Tech	Described distribution and characterization of the B-aquifer and the Bay Mud aquitard that separates the A- and B-aquifers
2/28/01	Storm Drain Infiltration Study	Tetra Tech	Investigated storm drains as conduits for migration of contaminated groundwater, as required by the ROD; investigation found lining storm drains or grouting bedding material was not necessary
4/17/03	Groundwater Investigation of Hexavalent Chromium at IR-10	Tetra Tech	Investigated the extent of chromium VI around well IR10MW12A; supports characterization of chromium VI
11/06	Technical Memorandum for Contamination Delineation at Remedial Unit C5	CE2	Investigated groundwater near Building 134 along the boundary between Parcels B and C; supports characterization of VOCs
6/00 - 7/08	Groundwater Monitoring Reports	various	Provided groundwater monitoring results; supports characterization of groundwater at Parcel B
Treatability Study Documents			
6/25/04	Cost and Performance Report for Zero-Valent Iron Injection Treatability Study, Building 123	ERRG and URS	Evaluated the performance of ZVI to treat VOCs in groundwater beneath Building 123; basis for use of ZVI in revised remedial alternatives
11/23/05	In Situ Sequential Anaerobic-Aerobic Bioremediation Treatability Study, Remedial Unit C5, Building 134, IR-25	Shaw	Evaluated injection of lactate and hydrogen to stimulate biological dechlorination of chlorinated solvents in groundwater; basis for use of lactate in revised remedial alternatives
11/10/06	Phase III Soil Vapor Extraction Treatability Study Report	ITSI	Expanded treatability study to evaluate soil vapor extraction for removal of TCE and other VOCs from soil beneath Building 123; basis for use of SVE in revised remedial alternatives

TABLE 2-1: HISTORY OF INVESTIGATIONS SINCE ROD (CONTINUED)

Parcel B Amended Record of Decision, Hunters Point Shipyard, San Francisco, California

Report Date	Title	Author	Activity Description and Effect on the 1997 ROD
Regulatory Documents			
10/7/97	Record of Decision (ROD)	Navy	Original record of decision
8/24/98	Explanation of Significant Differences	Navy	Revised remedy to include excavation to 10 feet below ground surface instead of to the groundwater table
5/4/00	Explanation of Significant Differences	Navy	Updated soil cleanup levels
12/10/03	First Five-Year Review of Remedial Actions Implemented at HPS	Tetra Tech	Assessed whether remedy at Parcel B is or will be protective
12/12/07	Technical Memorandum in Support of a Record of Decision Amendment	ChaduxTt	Explained the need for a ROD amendment and feasibility study of revised remediation alternatives
3/14/08	Technical Memorandum in Support of a Record of Decision Amendment Radiological Addendum	TtEC	Evaluated remediation alternatives to address radionuclides
6/28/08	Proposed Plan in Support of an Amended ROD	Navy	Presented revised selected remedy for public comment

Notes: Draft reports are listed when final reports are not yet published. Future dates are planned targets.

CE2	CE2 Corporation	SLERA	Screening-level ecological risk assessment
ERRG	Engineering/Remediation Resources Group, Inc.	TCE	Trichloroethene
HPS	Hunters Point Shipyard	TCRA	Time-critical removal action
IR	Installation Restoration	Tetra Tech	Tetra Tech EM Inc.
IT Corp.	International Technology Corporation	TtEC	Tetra Tech EC, Inc.
ITSI	Innovative Technical Solutions, Inc.	URS	URS Corporation
MK	Morrison Knudsen Corporation	VOC	Volatile organic compound
NAVSEA	Naval Sea Systems Command	ZVI	Zero-valent iron
ROD	Record of decision		

3.0 COMMUNITY PARTICIPATION

This section discusses the community participation activities that have been undertaken for Parcel B since the 1997 ROD. A community involvement plan was developed to document interests, issues, and concerns raised by the community in regard to the ongoing investigation and cleanup at HPS and to describe a specific community relations program designed to address community issues and concerns (ITSI and Tetra Tech 2004). The initial plan was prepared in May 1996 and was revised in 2003 and 2004. The revisions incorporated the most recent assessment of community issues, concerns, and informational needs related to the ongoing environmental investigation and remediation program at HPS.

3.1 RESTORATION ADVISORY BOARD

In 1993, pursuant to the Defense Environmental Restoration Program, 10 U.S.C. § 2705(d), the Navy formed a Restoration Advisory Board (RAB). Original membership in the board included regulatory agency staff, business and homeowner representatives, residents, and local elected officials whom the Navy solicited through newspaper notices.

The RAB currently consists of members of the Navy, the community, and the regulatory agencies. The RAB meetings occur monthly and are open to the public. Meetings are held in the evenings after normal working hours in the Alex L. Pitcher, Jr. Room at the Southeast Community Facility Commission Building located at 1800 Oakdale Avenue in San Francisco. RAB members review and comment on technical documents.

The Navy and regulatory agencies report information about Parcel B, including the availability of documents, to the RAB members during the monthly RAB meetings. Copies of the RAB meeting minutes and documents describing environmental investigations and removal actions are available at the following HPS information repositories and administrative record file locations:

San Francisco Main Library
100 Larkin Street
Government Information Center, 5th Floor
San Francisco, California 94102
Phone: (415) 557-4500

Anna E. Waden Bayview Library
5075 Third Street
San Francisco, California 94124
Phone: (415) 355-5757

Administrative Record
Naval Facilities Engineering Command, Southwest
Attention: Diane Silva, FISC Building 1, 3rd Floor
937 N. Harbor Drive
San Diego, California 92132-5190
Phone: (619) 532-3676

RAB meeting minutes also are available at the Navy BRAC Program Management Office web site at: <http://www.bracpmo.navy.mil/default.aspx>.

3.2 PUBLIC MAILINGS

Public information updates in the form of mailings, fact sheets, newsletters, and proposed plans, are used to ensure a broad dissemination of information throughout the local community. Information updates announcing the IR Program process at HPS are mailed to residents surrounding HPS and to city, state, and federal officials; regulatory agencies; local groups; and individuals identified in the Community Involvement Plan since May 1996 (PRC 1996a, ITSI and Tetra Tech 2004). The fact sheets, newsletters, and proposed plans are mailed to approximately 2,700 households, businesses, public officials, and regulatory agencies in an effort to reach as many community members as possible. Table 3-1 summarizes the HPS fact sheets, newsletters, and proposed plans related to Parcel B prepared since the 1997 ROD.

3.3 COMMUNITY PARTICIPATION

Related to the 1997 ROD. The original proposed plan was submitted to the public on October 16, 1996, to provide information and solicit public input on the Navy's recommended action (Navy 1996). A public comment period for Parcel B was held from October 24, 1996, to November 25, 1996, and was extended at the request of the community to December 26, 1996. A public meeting was held on November 13, 1996. A notice of the availability of the proposed plan was published in the *San Francisco Chronicle* on October 24, 1996, and in the *Independent* on October 25, 1996. A notice of the extension of the public comment period was published in the *Independent* on November 26, 1996, and in the *New Bayview* on December 6, 1996. Responses to written comments received during the public comment period were included in the responsiveness summary as Appendix B of 1997 ROD.

Related to this Amended ROD. This amended ROD is based on investigations conducted since the 1997 ROD (see Table 2-1 for documents and release dates) and on the final TMSRA which was released to the public in December 2007 (ChaduxTt 2007). The proposed plan to support the amended ROD was submitted to the public on June 28, 2008, to provide information and solicit public input on the Navy's recommended action (Navy 2008a). These documents are available to the public at the information repositories maintained at the San Francisco Main Library and Anna E. Waden Bayview Library and at the administrative record file. The information repository at the San Francisco Main Library also contains a complete index of the administrative record file (see Attachment A), along with information about how to access the complete file at the Naval Facilities Engineering Command Southwest offices in San Diego, California.

A public comment period for Parcel B was held from June 28, 2008, to July 28, 2008. A public meeting was held on July 8, 2008. A notice of the public comment period and public meeting was published in the *San Francisco Examiner* on July 5, 2008 and the *San Francisco Bayview* on July 2, 2008. Attachment B contains a copy of the public notice.

At the public meeting, the BRAC environmental coordinator and the Navy remedial project manager gave presentations on the conditions at Parcel B, and representatives from the Navy and environmental regulatory agencies were available to answer questions. A court reporter prepared a transcript of the meeting (see Attachment B). Responses to written comments received during the public comment period are included in the responsiveness summary as part of this amended ROD (see Attachment C).

ATTACHMENT C
RESPONSIVENESS SUMMARY

ATTACHMENT C RESPONSIVENESS SUMMARY

Amended Proposed Plan for Parcel B, Hunters Point Shipyard		
Spoken Comments by Sudeep Rao received at the public meeting held July 8, 2008		
Comment Number	Comment	Response
1	<p>How do the regulatory agencies assess community input and how are the criteria in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) weighted? Community input is at the bottom of the list of nine criteria.</p> <p>[Refer to the transcript of the public meeting beginning on page 106 for the complete comment.]</p>	<p>The Navy uses the nine criteria in the NCP to evaluate remedial alternatives. The first two criteria (protection of human health and the environment and compliance with applicable laws) are threshold requirements that all alternatives must meet to be selected. The next five criteria are called primary balancing criteria and are equally weighted in the evaluation. These five criteria include (1) long-term protectiveness, (2) reduction of toxicity, mobility, and volume through treatment, (3) short-term effectiveness, (4) implementability, and (5) cost. These criteria are the primary factors used to weigh the advantages and disadvantages of the alternatives and to select the preferred alternative. The remaining two criteria are called modifying criteria and they include (1) state acceptance and (2) community acceptance. Feedback from the state regulatory agencies and the community is used to modify the proposed remedial actions. These two criteria are addressed later in the evaluation process because input from the state and community is not complete until after the public comment period on the proposed plan.</p> <p>EPA's guidance on this issue includes: "Although community acceptance is not addressed as early as the primary balancing factors, which serve as the principal basis for determining the preferred alternative, it nonetheless is an important factor in EPA's final remedy selection decision." (55 Federal Register 46, p. 8730)</p>
2	<p>Table 11 on page 13 of the revised proposed plan does not mention any injection of chemicals for heavy metal immobilization. So that means we are not factoring in the costs? Costs will be included in the analysis after future groundwater tests are taken into account? My assumption is that current groundwater data do not necessitate any mobilization of metals.</p> <p>[Refer to the transcript of the public meeting beginning on page 107 for the complete comment.]</p>	<p>With the exception of mercury at Installation Restoration (IR) Site 26, data collected in 2008 do not indicate the need to inject chemicals to immobilize metals in groundwater. Removal of mercury source material at IR-26 is planned as a time-critical removal action. The Navy believes that this removal will eliminate the source of mercury to groundwater and that injection of chemicals to immobilize mercury will not be necessary as a result. Some wells where metals were of concern were destroyed by excavations during the remedial actions from 1999 to 2001 and new wells will need to be installed and sampled to evaluate the need to immobilize metals at those locations. Costs for injection of chemicals to immobilize metals were not included on Table 11 of the proposed plan because injection is considered only as a contingency measure.</p>

Amended Proposed Plan for Parcel B, Hunters Point Shipyard		
Spoken Comments by Sudeep Rao received at the public meeting held July 8, 2008		
Comment Number	Comment	Response
3	<p>Table 12 of the revised proposed plan shows Alternatives R-2 and R-3 differ only in long-term effectiveness and implementability. Why is R-3 better than R-2 for these two criteria?</p> <p>[Refer to the transcript of the public meeting beginning on page 107 for the complete comment.]</p>	<p>The only difference between Alternatives R-2 and R-3 relates to how the pump pit beneath Building 140 is addressed. Alternative R-2 would leave the pump pit as it is and control exposure by limiting access to the pit. Alternative R-3 would close the pump pit in place with backfilled stone and a concrete cap. Surveys of the pump pit have shown that it qualifies for unrestricted closure and filling the pit is unnecessary. Consequently, the Navy has revised its selection of the remedy for radionuclides to Alternative R-2. Alternatives R-2 and R-3 are not substantially different in terms of long-term effectiveness or implementability. Alternative R-2 is slightly less expensive.</p>
4	<p>The original 1997 Record of Decision (ROD) did not account for radionuclides. What activities will the regulatory agencies undertake to minimize the chance for future uncertainties that might cause another amendment to the ROD?</p> <p>[Refer to the transcript of the public meeting beginning on page 124 for the complete comment.]</p>	<p>The Navy and the regulatory agencies are working to ensure the amended ROD for Parcel B will be as complete and comprehensive as possible. The protectiveness of the remedy will be evaluated at least every 5 years to ensure it remains protective. These 5-year reviews are required by law and will include any new information that may become available in the future.</p>

Amended Proposed Plan for Parcel B, Hunters Point Shipyard		
Spoken Comment by Oscar James received at the public meeting held July 8, 2008		
Comment Number	Comment	Response
1	<p>We want this shipyard 100 percent clean. We want nothing less than 100 percent clean.</p> <p>[Refer to the transcript of the public meeting beginning on page 108 for the complete comment.]</p>	<p>The goal of the remedial action at Parcel B is to protect human health and the environment to the standards set by the federal and state regulatory agencies. The remedies proposed in the Parcel B proposed plan, and detailed in this amended ROD, address all contamination at Parcel B that resulted from past Navy activities. After all the proposed actions are conducted and operation and maintenance and institutional controls (IC) are implemented, the actions proposed will be protective of human health.</p>

Spoken Comments by Espanola Jackson received at the public meeting held July 8, 2008		
Comment Number	Comment	Response
1	<p>I feel, like the speaker before me, we are not going to accept any less than that total shipyard to be clean to residential standards.</p> <p>[Refer to the transcript of the public meeting beginning on page 109 for the complete comment.]</p>	<p>The goal of the remedial action at Parcel B is to protect human health and the environment to the standards set by the federal and state regulatory agencies. Cleanup goals consider the expected future land use so not all areas will be remediated to residential levels. For example, areas that will become open space will be remediated to standards that consider recreational use. Nevertheless, all of Parcel B will be covered to protect all users from exposure to surface soil.</p>
2	<p>Weren't other parcels contaminated by dust blowing from Parcel A during construction there?</p> <p>[Refer to the transcript of the public meeting beginning on page 111 for the complete comment.]</p>	<p>Parcel A did not contain any spills or releases from Navy activities. Dust from Parcel A did not contaminate other parcels. Any dust from Parcel A would be expected to contain the same naturally occurring minerals as on all the parcels (as well as in much of the San Francisco area). Some of those minerals may pose risk to people and the remedy at Parcel B includes covers to protect people from exposure to them.</p>
3	<p>Don't fast-track the cleanup of Parcel B; take your time. For example, recognition and understanding of radiation at Parcel B took a number of years.</p> <p>[Refer to the transcript of the public meeting beginning on page 111 for the complete comment.]</p>	<p>The Navy works together with the regulatory agencies during each step to complete the remediation of Parcel B according to all applicable laws to protect human health and the environment. The Navy develops schedules for remediation in coordination with both the regulatory agencies and the public (through the Restoration Advisory Board [RAB]). The schedule for transfer of Parcel B will not affect the completeness or effectiveness of the remediation.</p>

Amended Proposed Plan for Parcel B, Hunters Point Shipyard		
Spoken Comments by Pamela Calvert received at the public meeting held July 8, 2008		
Comment Number	Comment	Response
1	<p>I'd like to enter into the comments the suggestion that the risk assessment and the ROD take into account a major seismic event, the impact of that on the capping and the control of the contaminants in place.</p> <p>[Refer to the transcript of the public meeting beginning on page 113 for the complete comment.]</p>	<p>The remedy components (for example, covers) at Parcel B will be designed to withstand earthquakes in accordance with California state laws (California Code of Regulations Title 22 Section 66264.310[a][5]). In addition, the operation and maintenance plans for the covers will include provisions for repairs to follow an earthquake, also in accordance with state law (California Code of Regulations Title 22 Section 66264.310[b][1]).</p>
2	<p>The human health risk assessment (HHRA) should consider a resident who works at an industrial site on the base and then goes out to recreate on site and also lives there.</p> <p>[Refer to the transcript of the public meeting beginning on page 113 for the complete comment.]</p>	<p>The HHRA for Parcel B evaluated health risks separately for residents, industrial workers, and recreational users. The HHRA did not specifically evaluate a resident who lives, works, and recreates at the site. However, the residential risk evaluation is protective of a resident who also works and recreates at the site because the residential evaluation assumes continuous exposure, 24 hours a day, 350 days a year, for 30 years.</p> <p>After all the proposed actions are conducted and operation and maintenance and ICs are implemented, the actions proposed will be protective of human health and the environment and meet all cleanup objectives.</p>
3	<p>Solving problems for Bayview—Hunters Point shouldn't involve creating problems for other people's communities. I would like to see a cradle-to-grave analysis of what's being taken from here, put somewhere else, and then what? I would like to see that taken into account in the analysis in the ROD.</p> <p>[Refer to the transcript of the public meeting beginning on page 114 for the complete comment.]</p>	<p>Some wastes removed from Parcel B must be disposed of at facilities that are not located in California because adequate facilities do not exist in the state. For instance, the State of California does not allow disposal of low-level radioactive waste within the boundaries of the state. Therefore, all waste containing radioactive material must be disposed of elsewhere.</p>

Amended Proposed Plan for Parcel B, Hunters Point Shipyard		
Spoken Comments by Francisco DaCosta received at the public meeting held July 8, 2008		
Comment Number	Comment	Response
1	<p>At one time on Hunters Point, there were shell mounds of the Muwekma Ohlone which were demolished during construction of the shipyard. All of the shipyard should be archaeologically surveyed.</p> <p>[Refer to the transcript of the public meeting beginning on page 115 for the complete comment.]</p>	<p>Remedial actions at Parcel B will follow all applicable laws related to archaeological sites that may be present.</p>
2	<p>Radiological elements that are on the shipyard have to be removed.</p> <p>[Refer to the transcript of the public meeting beginning on page 116 for the complete comment.]</p>	<p>The preferred alternative for remediation of radionuclides uses removal and off-site disposal to the maximum extent practicable. However, some areas will be addressed by covers (IR Sites 7 and 18).</p> <p>IR Sites 7 and 18 include a large area (about 13 acres) of fill that is also very deep (approximately 45 feet in some locations). This area has a potential for radioactive contamination according to the Hunters Point Historical Radiological Assessment (HRA). Identification of buried radionuclides through subsurface testing would be very difficult, and, if radioactivity is present, it would be very limited and not spread throughout the sites. The excavation of the entire area of fill would also be very difficult because of the presence of groundwater. Upon evaluation of these factors, the Navy proposed that removal would not be the preferred alternative for IR Sites 7 and 18. After considerable review by the Navy and regulatory agencies, it was proposed that a radiological surface scan of IR Sites 7 and 18 with removal of any contamination in the top 12 inches followed by a 1-foot-thick layer of clean soil, a demarcation layer, and a 2-foot-thick soil cover will effectively prevent exposure to any radionuclides that may be present in the subsurface soil. Additionally, it was proposed that institutional controls will be placed, inspected, and enforced for IR Sites 7 and 18 to ensure the continued integrity of the covers and allow proper control of any activities that would penetrate the cover.</p> <p>Removal of potential radionuclides in the pump pit beneath Building 140 is not necessary because surveys of the pump pit indicate it can be released for unrestricted closure.</p>

Amended Proposed Plan for Parcel B, Hunters Point Shipyard		
Spoken Comments by Francisco DaCosta received at the public meeting held July 8, 2008		
Comment Number	Comment	Response
3	<p>Areas of Parcel B which are prone to liquefaction and rising sea level should be taken into an account.</p> <p>[Refer to the transcript of the public meeting beginning on page 117 for the complete comment.]</p>	<p>The remedy components (for example, covers) at Parcel B will be designed to withstand earthquakes in accordance with California state laws. Likewise, the designs will consider the potential for rising sea level. For example, the top of the shoreline revetment will be sufficiently above sea level (about 13 to 15 feet) to account for a potential future rise in sea level.</p> <p>In addition, changes in site conditions, such as a rise in sea level, will be addressed during future 5-year reviews which address changes in site conditions and recommend modifications to the remedy if necessary to protect human health and the environment.</p>
4	<p>It is a request of the Muwekma Ohlone tribe to do whatever is right on behalf of the people to clean up the entire shipyard to residential standards according to Proposition P that passed in the year 2000.</p> <p>[Refer to the transcript of the public meeting beginning on page 118 for the complete comment.]</p>	<p>The goal of the remedial action at Parcel B is to protect human health and the environment to the standards set by the regulatory agencies. Cleanup goals consider the expected future land use so not all areas will be remediated to residential levels. For example, areas that will become open space will be remediated to standards that consider recreational use. Nevertheless, all of Parcel B will be covered to protect all users from exposure to the surface soil.</p>

Spoken Comment by Adela Andrea Flores Bolanos received at the public meeting held July 8, 2008		
Comment Number	Comment	Response
1	<p>I would like the Navy to do a hundred percent cleanup. I don't want a cap or anything like that. Now is the time to do the right thing, clean everything up, take everything that is hazardous to human health away from the shipyard.</p> <p>[Refer to the transcript of the public meeting beginning on page 118 for the complete comment.]</p>	<p>The goal of the remedial action at Parcel B is to protect human health and the environment to the standards set by the regulatory agencies. All of Parcel B will be covered to protect all users from exposure to the soil regardless of the future use. Covers are an effective way to eliminate exposure and protect human health.</p>

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Spoken Comments by Octavio Guillermo Solorzano received at the public meeting held July 8, 2008**

Comment Number	Comment	Response
1	<p>What will be the proper precautions that will be taken to make sure that everybody's health stays normal or it gets better?</p> <p>[Refer to the transcript of the public meeting beginning on page 120 for the complete comment.]</p>	<p>The overall goal of the remedial action at Parcel B is to protect human health. All components of the remedy are designed for that purpose. Appropriate engineering measures (for example, dust control) will be used during remediation to limit risks to site workers and the surrounding Bayview Hunters Point community. After the remedy is in place, operation and maintenance requirements will ensure it is maintained properly. In addition, land use controls will be imposed to limit or prohibit activities that might pose risk to future residents or the surrounding community. For example, use of groundwater will be prohibited.</p> <p>However, the protectiveness of the remedy will be evaluated at least every 5 years to ensure it remains protective. These 5-year reviews are required by law and will include any new information that may become available in the future.</p>
2	<p>I don't want the Navy to put caps or covers. Just 100 percent cleanup.</p> <p>[Refer to the transcript of the public meeting beginning on page 120 for the complete comment.]</p>	<p>The goal of the remedial action at Parcel B is to protect human health and the environment to the standards set by the regulatory agencies. All of Parcel B will be covered to protect all users from exposure to the soil regardless of the future use. Covers are an effective way to eliminate exposure and protect human health.</p>

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Spoken Comment by Raymond Tompkins received at the public meeting held July 8, 2008**

Comment Number	Comment	Response
1	<p>I understand from the presentation that we're using a medical model that only takes into account a 35-year-old white male and does not deal with women or subset populations or at-risk populations. In Bayview we have a disproportionately high-risk population and this population should be considered in the risk assessment.</p> <p>[Refer to the transcript of the public meeting beginning on page 121 for the complete comment.]</p>	<p>The Navy recognizes that some individuals are more sensitive to chemical exposures and this adds uncertainty to the risk assessment. The HHRA was not based solely on exposure to a 35-year-old white male. The HHRA for Parcel B used conservative exposure assumptions so that risk estimates were protective of sensitive populations (children, for example). The HHRA combined multiple conservative assumptions so that the resulting risk estimates over-predict cancer risks and noncancer hazards.</p> <p>For example, residents were assumed to be continually exposed 24 hours per day, 350 days per year, for 30 years to evaluate health risks for residential exposures. Likewise, workers were assumed to be continually exposed 8 hours per day, 250 days per year, for 25 years for industrial exposures.</p> <p>In a few cases, specific toxicity studies and data were available that address sensitive populations. For example, the risk assessment of health effects from exposure to lead was protective of children and nursing women. Also, health risks were assessed separately for children, since exposure is greater for children than adults, relative to body weight. Data for sensitive populations were incorporated in the HHRA for Parcel B when available.</p>
2	<p>The Navy should require a system of accountability for the citizens to know who to call and to have oversight similar to the RAB for public participation.</p> <p>[Refer to the transcript of the public meeting beginning on page 122 for the complete comment.]</p>	<p>The Navy maintains active contact with the public through the RAB and through direct contact by telephone, email, facsimile, and regular mail. The RAB will remain in place as long as the Navy owns the property at Hunters Point. The RAB would be discontinued after the Navy's ownership ends. However, Navy staff would still be available by the same direct contact methods. Other oversight mechanisms available include the Community Advisory Committee provided through the San Francisco Redevelopment Agency. In addition, citizens can contact local elected officials and regulatory agencies to express any concerns about oversight.</p>

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Spoken Comment by Kristine Enea received at the public meeting held July 8, 2008**

Comment Number	Comment	Response
1	<p>I had a request for IR-18 that Blocks 1 and 2 be considered separately and that Block 1 be cleaned to residential or mixed-use standards so that that entire block between Earl, Donahue, Hudson, and Innes can be used more actively than just open space. And I also wanted to state for the record that the community is seeking to have the Hudson right-of-way opened for at least pedestrians and bicyclists. So I'd like to see cleanup along that alignment that allows for whatever grading or other roadway construction is required. If it's to be used as a commuter bike path, the grade, I think, can be no more than 5 percent. And so I just want to make sure that whatever cleanup is done will accommodate that potential future use.</p> <p>[Refer to the transcript of the public meeting beginning on page 125 for the complete comment.]</p>	<p>The Navy will conduct remedial actions that are consistent with the proposed reuse areas which are detailed in the City of San Francisco's 1997 Redevelopment Plan. The remedial action objectives for Redevelopment Blocks 1 and 2 are the same because both consider reuses that are evaluated under a residential scenario (mixed use and research and development). The Navy cannot assume other reuses until a new plan is issued. The City and County of San Francisco has reviewed the draft land use restrictions and has indicated that it is generally willing to support them subject to a few clarifications regarding areas requiring institutional controls that are currently under discussion and are addressed elsewhere.</p> <p>However, the remedy for soil at Redevelopment Blocks 1 and 2 includes a soil cover. The presence of the cover should not deter use of the area by pedestrians or bicyclists. Future documents will describe the requirements for digging into the cover (for example, if grading is needed to change the surface slope).</p>

Written Comment by Tanya Joyce received July 8, 2008 at public meeting

Comment Number	Comment	Response
1	<p>I am an artist with a studio in Hunters Point Shipyard. Mixed use is vital for the shipyard, for southeast San Francisco, and for the city as a whole. Retaining genuinely affordable artists' studios is vital to San Francisco's economy. Retaining open space linked to the Bay Trail is vital for our regional and local environments.</p> <p>Studies have shown that arts-related activity provides 13 percent of San Francisco's revenue. Studies have also shown that the city desperately needs low-income housing and increased job opportunities to remain financially robust for residents and visitors alike. Keep studios and open space in the yard!</p>	<p>The planned reuse for Parcel B includes mixed uses as well as open space areas.</p>

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by City and County of San Francisco received July 25, 2008 by email**

Comment Number	Comment	Response
1	<p>Figure 7 which shows the boundaries of the ARIC [area requiring institutional controls] for IR-07/18 and the related text in Overview of Proposed Institutional Controls, specifically the “Proposed Land Use Restrictions for IR Sites 7 and 18”, imply that the entire area of IR-07/18 will need the proposed radiological restrictions. The extent of proposed restriction is not supported by the historical information. The boundaries of IR-07/18 were originally drawn because of historical uses (including a paint shop) unrelated to suspected radiological contamination. The suspicions about radiological contamination in the area were not identified until the publication of the HRA – long after the IR-07/18 boundary had been drawn. It was convenient to refer to the whole area when discussing the radiological concerns because detailed research had not been performed to identify the area within IR-07/18 that actually contained possible radiological contamination – which may or may not exist. The Navy has since performed research into the extent of the debris fill in the IR-07/18 area. The debris fill may contain possible radiological contamination, but the Navy’s research indicates that the fill does not extend all the way to the boundaries of the IR-07/18 area. We request that the Navy propose boundaries for the extent of the radiological restricted area that are limited to the areas supported by the historical information and not overly restrict land where it is not warranted. Specifically, we request that all references to the proposed radiological restriction in IR-07/18 be changed to “a portion of IR-07/18” and that a footnote should be added to Figure 7 that clearly states that the final boundaries will be decided as part of the Radiological Remedial Design (to be completed prior to transfer).</p>	<p>The HRA is the source document for the definition of areas that are radiologically impacted. The HRA considered all of IR Sites 7 and 18 to be radiologically impacted as the boundaries of the IR sites were consistent with the boundaries of the fill areas. To address various concerns of the regulatory agencies and the City and County of San Francisco, the Navy is reviewing the history of the Parcel B fill area to confirm the fill area boundaries that could be considered radiologically impacted. The Navy will provide the results of this review to the regulatory agencies to discuss the determination of the boundaries of radiologically impacted areas in comparison to the boundaries of the area requiring institutional controls (ARIC) at IR Sites 7 and 18.</p>

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by City and County of San Francisco received July 25, 2008 by email**

Comment Number	Comment	Response
2	In the Overview of Proposed Institutional Controls, Proposed Activity Restrictions Relating to VOC vapors at Specific Locations within Parcel B, it states that “Initially, the ARIC includes all of Parcel B except Redevelopment Block 4” and Figure 7 illustrates this statement with a yellow highlight on the Parcel in every location except Redevelopment Block 4. We think this is a misrepresentation of the current state of knowledge about the ARIC for VOC vapors and unnecessarily restricts Parcel B. Our request is to phrase the restriction as “Initially, the ARIC will include all areas of the parcel with soil gas levels above the remediation goals” and to remove the yellow highlight from Figure 7. This sentence more accurately reflects the current state of knowledge about the ARIC for VOC vapors and describes where the ARIC will be required. The soil gas surveys will be performed in areas where past uses and data suggest possible concerns regarding soil gas and establishment of the soil gas remediation goals will be done in the future. However, based on the current knowledge of the site we are certain that there are many areas where no soil gas sampling will be required and there will be no requirement for an ARIC for VOCs.	The ARIC for vapor intrusion may be modified as remediation is completed or in response to further sampling and analysis that establishes that areas now in the ARIC do not pose unacceptable potential exposure risk to volatile organic compound (VOC) vapors. The initial ARIC is proposed to include the entire parcel (except Redevelopment Block 4) because existing data for soil gas are insufficient to further reduce the size of the ARIC.
3	We understand that the design of the IR-07/18 engineering controls including the demarcation layer and depth of the clean fill will be finalized in the Radiological Remedial Design (to be completed prior to transfer). We will be closely reviewing these documents prior to transfer to verify that the type of demarcation layer and depth of clean fill will be robust enough to provide physical cues to anyone digging in the area that will prevent them from inadvertently digging below the demarcation layer. We are not concerned that there will be any undue health risk to accidental digging below the demarcation layer but we want to be certain that any accidental digging will trigger proper notifications as required and that the damage to the cover will be repaired.	The Navy will coordinate with the city during preparation of the design of the cover at IR-07 and IR-18 to work out the details of the demarcation layer.

Amended Proposed Plan for Parcel B, Hunters Point Shipyard

Written Comments by City and County of San Francisco received July 25, 2008 by email

Comment Number	Comment	Response
4	We appreciate that the Navy has revised the text of the proposed plan to discuss some of the remedy implementation plans in relation to reuse areas instead of redevelopment blocks. In future documents please continue to work toward the goal of dropping the use of the redevelopment blocks to describe areas of the parcel because land planning efforts are anticipating a change to the configuration of the blocks.	<p>The proposed plan was revised to reduce the use of and emphasis on redevelopment blocks to the extent possible. However, a means to clearly and unambiguously identify areas within Parcel B is still needed to explain the proposed remedial actions, and redevelopment blocks still serve that purpose. The Navy would appreciate communication from the city when changes to redevelopment blocks, and especially those changes that affect the reuse exposure, are identified.</p> <p>The Navy will work closely with the city to use the most current plans for land reuses at Parcel B. The Navy will continue to use redevelopment blocks, as necessary, in the amended ROD.</p>
5	We would like to point out for the record, that once the engineering controls and institutional controls are properly installed and maintained the current design of the proposed remedies will cut off pathways for: (a) contact with soil contaminants and (b) inhalation of indoor VOC vapors and this means that the entire property will be health protective for all types of uses.	<p>The proposed remedial alternatives are specific to the reuse identified for each area. Future residents would be protected in areas currently identified for industrial or recreational reuse only by the consistent enforcement of the activity restrictions described by the proposed ICs. For example, the ARIC for vapor intrusion would need to be maintained in areas currently identified as open space (unless the ARIC could be modified by new data for soil gas, as discussed above in the response to comment 2). The Navy believes stating that the proposed remedy would result in an environment that would not pose health risks for future residents implies that future reuse would be unrestricted, and unrestricted use will not be the case. The following text was added to the proposed plan to note the general protectiveness of the planned revised remedy: <i>"After all the proposed actions are conducted and operation and maintenance and ICs are implemented, the actions proposed will be protective of human health and the environment and meet all cleanup objectives."</i></p>

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by Kristine Enea, India Basin Neighborhood Association, received by email on July 28, 2008**

Comment Number	Comment	Response
1	We are concerned with the lack of testing beyond 12" from the surface for radiological contaminants in Sites IR-07 and IR-18. We would like further testing to be done on those sites.	As IR Sites 7 and 18 constitute approximately 13 acres and radiological contamination, if present, would most likely consist of small pockets of contamination (approximately 1 to 2 feet in diameter), subsurface testing is not considered practical as it would be very expensive and the contamination could be easily missed. Surface scans will effectively and efficiently locate any radiological anomalies within the top 12 inches of soil. Any radiological contamination found during the scan will be excavated and disposed of at an off-site low-level radioactive waste disposal facility.
2	Our understanding is that the regulators in charge of assessing radiological risk have informed the Navy that the only avenue to an unrestricted transfer of IR-07 and IR-18 would be to excavate the soil in those areas down to the sea floor, and that this unrealistic requirement leaves no practical testing alternative beyond a surface screen.	Navy's discussions with the regulatory agencies have indicated that unrestricted transfer is not an option for IR Sites 7 and 18.
3	We would like to see systematic core testing for radioactive material in Sites IR-07 and IR-18, and a reasonable standard set for unrestricted transfer of those sites, to achieve the re-use plans the neighborhood is seeking, including mixed use construction on all of Block 1 of IR-18 and construction of a paved vehicle road along the Hudson right-of-way between Earl and Donohue, as well as more active use of the large percentage of those sites that has already been excavated and backfilled from four to ten feet.	As IR Sites 7 and 18 constitute approximately 13 acres and radiological contamination, if present, would most likely consist of small pockets of contamination (approximately 1 to 2 feet in diameter), subsurface testing is not considered practical as it would be very expensive and the contamination could be easily missed. Surface scans will effectively and efficiently locate any radiological anomalies in the top 12 inches of soil. Any radioactive contamination found will be excavated and disposed of at an off-site low-level radioactive waste disposal facility. A new 1-foot-thick layer of clean soil will be added to the surveyed soil surface. This will allow for 1 foot of radiologically cleared soil plus another 1 foot of clean soil under the 2-foot-thick soil cover remedy. This cover will allow for use of the surface of the area as a radiologically unrestricted area, providing the use does not penetrate the remedy. Complete unrestricted transfer of IR Sites 7 and 18 is not acceptable to the regulatory agencies. Use of IR Sites 7 and 18 for residences would be allowable only in accordance with the Covenant(s) to Restrict Use of the Property, Quitclaim Deed(s), and the Parcel B risk management plan. However, the proposed remedy for IR Sites 7 and 18 (covers) would accommodate a paved vehicle road.

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by Kristine Enea, India Basin Neighborhood Association, received by email on July 28, 2008**

Comment Number	Comment	Response
4	A more realistic cleanup standard for Sites IR-07 and IR-18 will benefit the community beyond enabling our desired re-uses. We want to feel safe in our neighborhood. If a reasonable amount of testing is done and no rad material is found, then in combination with the rad screens that were already performed on some of the excavated soil as it was being trucked out, the additional surface scans, and the large percentage of clean backfill already in place, we would have a large degree of confidence that we are not burying dangerous radioactive material underneath the proposed cap.	As IR Sites 7 and 18 constitute approximately 13 acres and radiological contamination, if present, would most likely consist of small pockets of contamination (approximately 1 to 2 feet in diameter), subsurface testing is not considered practical as it would be very expensive and the contamination could be easily missed. Covers at IR Sites 7 and 18 will effectively mitigate exposure to any radionuclides that may be present at depth within the original fill materials. Institutional controls will be placed, inspected, and enforced to ensure the continued integrity of the covers.
5	If necessary in light of a potential early transfer of Parcel B, we would like Sites IR-07 and IR-18 to be carved out and considered for transfer separately. We also request a more fine-grained division of those IR parcels in order to develop institutional controls that more accurately reflect the excavation work that has already been completed.	Subdivision of IR Sites 7 and 18 would not change the status of any of the area as radiologically impacted nor would it change the necessary ICs. The Hunters Point HRA is the source document for the definition of areas that are radiologically impacted. The HRA considered all of IR Sites 7 and 18 to be radiologically impacted as the boundaries of the IR sites were consistent with the boundaries of the fill areas. To address various concerns of the regulatory agencies and the City and County of San Francisco, the Navy reviewed the history of the Parcel B fill area to confirm the fill area boundaries that could be considered radiologically impacted. The Navy provided the results of this review to the regulatory agencies in a letter dated November 7, 2008 that discussed the determination of the boundaries of radiologically impacted areas that will be used to identify the boundaries of the area requiring institutional controls (ARIC) at IR Sites 7 and 18. Additionally, as the previous excavations at IR Sites 7 and 18 have not removed all the fill to its full depth, it is not practical to limit the ARIC based on those excavations.

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comment by Lee Geeter received by mail on July 29, 2008**

Comment Number	Comment	Response
1	My comment is more in the form of a question. I am concerned about the safety of the proposed development. My concern is about the time line the Lennar Corp. is proposing to use on the Hunters Point development. I am asking, how can the development be safe by "capping" in 2 years when a total cleaning will take 4 or maybe 5?	<p>The Navy works together with the regulatory agencies during each step to complete the remediation of Parcel B according to all applicable laws to protect human health and the environment. The Navy develops schedules for remediation in coordination with both the regulatory agencies and the public (through the RAB). The schedule for transfer of Parcel B will not affect the completeness or effectiveness of the remediation.</p> <p>The goal of the remedial action at Parcel B is to protect human health and the environment to the standards set by the regulatory agencies. All of Parcel B will be covered to protect all users from exposure to the soil regardless of the future use. Covers are an effective way to eliminate exposure and protect human health.</p>

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by J.V. McCarthy received by email on July 31, 2008**

Comment Number	Comment	Response
Introduction	If the “Proposed Plan”- “Revised”- for Hunters Point Shipyard is expected to meet CERCLA 120 (h)(3)(C), this seems doubtful where out of compliance at time of proposed transfer. If restrictions specified by the “...Covenants to Restrict Use of Property...” apply as condition of transfer, the proposed construction related “covers” can only be certified in place after transfer. Transfer restriction site “covers” are furthermore in compromise by installation of foundation support piers, which require a deep penetration under “covers.”	If the property in Parcel B is conveyed as an “early transfer” subject to the requirements of Section 120(h)(3)(C) of CERCLA, it is anticipated that the transferee will be responsible for constructing covers after transfer with the exception of IR Sites 7 and 18 where the Navy will construct them. The covers will be constructed to meet all the requirements of the remedial design, and will be conducted under the oversight of the regulatory agencies regardless of whether they are constructed by the Navy or its transferee. The deed of transfer will contain any necessary interim land use restrictions required to protect covers following construction and comply with Section 120(h)(3)(C) of CERCLA. Please see the response to Comment Number 1 below for a discussion of foundation support piers.
1	Construction related “covers”, as well as foundation support piers where required through bay mud and fill, are out of compliance with “... land disturbing activity...” restriction (“Restricted Activities”, a.) where this occurs following transfer.	Any construction-related covers or foundation support piers constructed after transfer will be constructed to be protective of human health and the environment, and will meet the requirements of the remedial design.
2	Construction related “alteration, disturbance, or removal...” is likely to be out of compliance where this may involve installation of public utilities for permanent structures, as required by construction activities which follow property transfer.	Any breaching or alteration of the cover post-transfer will be conducted in compliance with the Covenant(s) to Restrict Use of the Property, Quitclaim Deed(s), and the Parcel B risk management plan, all of which will be reviewed and approved by the regulatory agencies.
3	Incomplete discovery, or fluid migration, is an unspecified source of potentially irradiated soil vapors which could become trapped within a permanent structure, to become a source of future hazard exposure where earthquake damage occurs.	The remedy components (for example, covers) at Parcel B will be designed to withstand earthquakes in accordance with California state laws (California Code of Regulations Title 22 Section 66264.310[a][5]). In addition, the operation and maintenance plans for the covers will include provisions for repairs to follow an earthquake, also in accordance with state law (California Code of Regulations Title 22 Section 66264.310[b][1]).

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by J.V. McCarthy received by email on July 31, 2008**

Comment Number	Comment	Response
4	Other vapors, such as mercury or methane, could be a source of future exposure which by impact from a radiation source could further complicate subsurface toxicologies available for any "cover" breaching.	Remedies are proposed for the methane and mercury sources in the Revised Proposed Plan. These remedies will address the risk to human health and the environment from these sources. Further, time-critical removal actions (TCRA) are being conducted to address these sources. The use of TCRAs allows the Navy to get an early start on cleanup of these newly identified sources. Although the TCRAs may not be completed by the time the amended ROD is signed, the Navy anticipates that the TCRAs will meet the cleanup objectives described in the proposed plan. After the TCRAs are completed, the Navy will evaluate the need for additional response actions.
5	Consequences from potential long-term exposure of foundation piers to any unspecified radioactivity, in combination with other chemistry, not only puts any construction at structural risk but introduces risk of "cover" breaching exposure.	IR Sites 7 and 18 are the only areas on Parcel B that may be transferred with potential radioactive contamination in place below protective covers and it is anticipated that foundation piers will not be require there. Additionally, institutional controls will be placed, inspected, and enforced for IR Sites 7 and 18 to ensure the continued integrity of the protective covers and allow proper control of any activities that would penetrate the cover.
6	The basic issues cited for "Parcel G", per notice to Congresswoman N. Pelosi and Supervisor A. Peskin also apply to Covenant Restriction for "Parcel B" (refer to the following page with items # 1.- 10.)	The Navy does not have a copy of this notice and cannot respond. However, the Navy team is aware of and is ensuring that there is consistency between land use restrictions being considered and developed for the different parcels.

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by J.V. McCarthy received by email on July 31, 2008**

Comment Number	Comment	Response
Introduction to items 1-10	How inappropriate is a linking of "Candlestick Park" development with Hunter's Point Shipyard reuse? If "Parcel 49" of the former Hunter's Point Shipyard is to be considered fit for new stadium construction, the potential liability is worth more than a passing glance. A deferral or covenant agreement required as the waiver to federal conditions of the city's exclusive discretion, to federal conditions in transfer, is specified from CERCLA 120 h(3)(C). This is because the environmental remediation is not without conditions. No matter what the political priorities, the land speculation, or the wishful thinking, parcel areas requiring this kind of covenant agreement will remain so for good reasons (refer to CLEAN II, Department of the Navy, 09/04/98, HPS). "Parcel 49" is not exempt. The local SF CUPA or HAZMAT agency, the involved state agencies, and the title insurance people will all have serious obligations and concerns to be maintained.	A new San Francisco 49ers stadium had been proposed for Parcel G (formerly Parcel 49). This ROD is for Parcel B. Therefore, this comment will be forwarded to the Navy Remedial Project Manager (RPM) for consideration in the Parcel G remedy selection process. The draft Parcel G ROD is scheduled for submittal on August 29, 2008.
Item 1	Subparcels S-28, S-29, S-38, and S-39 are co-located where "Parcel 49", formerly in Parcel D, has been proposed. All are cited for sandblast waste and radioactive materials, at least some of which are likely to have been left from "Operation Crossroads" (1946-1947, see "Historical Radiological Assessment", 2004).	This is the Responsiveness Summary for Parcel B, not D; therefore, this comment will be forwarded to the Navy RPM for consideration in the Parcel G remedy selection process. The draft Parcel G ROD is scheduled for submittal on August 29, 2008.

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by J.V. McCarthy received by email on July 31, 2008**

Comment Number	Comment	Response
Item 2	It is unlikely that the maximum extent of excavation in the foreseeable future, as sponsored by the Navy, will go any farther than the inconclusive excavation, to be capped, for IR-07 and IR-18 of Parcel B where the radiation at depth will go unresolved. Consider the implications in D for S-28, S-29, S-38, and S-39.	<p>IR Sites 7 and 18 include a large area (about 13 acres) of fill that is also very deep (approximately 45 feet in some locations). This area has a potential for radioactive contamination according to the Hunters Point HRA. Identification of buried radionuclides through subsurface testing would be very difficult, and if radioactivity is present it would be very limited and not spread throughout the sites. The excavation of the entire area of fill would also be very difficult because of presence of groundwater. Upon evaluation of these factors, the Navy proposed that removal would not be the preferred alternative for IR Sites 7 and 18. After considerable review by the Navy and regulatory agencies, it was proposed that a radiological surface scan of IR Sites 7 and 18 with removal of any contamination in the top 12 inches, followed by 1 foot of clean soil, followed by a 2-foot-thick soil cover will effectively prevent exposure to any radionuclides that may be present in the subsurface soil. Additionally, it was proposed that institutional controls will be placed, inspected, and enforced for IR Sites 7 and 18 to ensure the continued integrity of the covers and allow proper control of any activities that would penetrate the cover.</p> <p>Please also see the Responsiveness Summary in the Parcel G ROD, to be issued on August 29, 2008, for a discussion of Parcel D.</p>
Item 3	The materials applied for support piers to penetrate landfill are likely to be what is planned for building foundation support, as under the cap required for "Parcel 49" remediation.	Please see the Responsiveness Summary in the Parcel G ROD, to be issued on August 29, 2008.
Item 4	The materials within Type II or Type V cement are likely to be sheathed in polyethylene, which could be degraded to penetration, seepage, and breaching by subsurface exposure to radiation, at depth over time.	Materials used during remediation, including the cover material, will be selected during the remedial design phase of the project and will be constructed to be robust and persistent over time. However, the protectiveness of the remedy will be evaluated at least every 5 years to ensure it remains protective. These 5-year reviews are required by law and will include any new information that may become available in the future.
Item 5	Where exposed, although the Type II cement is more flexible it is also more readily penetrated. Type V cement is more resistant, from greater density, although less flexible.	Please see the response to Item 4 above.

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by J.V. McCarthy received by email on July 31, 2008**

Comment Number	Comment	Response
Item 6	In considering the seismic safety prospects, on top of bay mud, would you care to insure or invest in this site if adequate information about all the unknown factors were available, which could be more?	The remedy components (for example, covers) at Parcel B will be designed to withstand earthquakes in accordance with California state laws (California Code of Regulations Title 22 Section 66264.310[a][5]). In addition, the operation and maintenance plans for the covers will include provisions for repairs to follow an earthquake, also in accordance with state law (California Code of Regulations Title 22 Section 66264.310[b][1]).
Item 7	Much of the suggested potential for discovery, at depth, ("Historical Radiological Assessment", 2004) is likely to be awaiting survey and investigation beyond transfer dates of parcels, from the Navy to the city.	IR Sites 7 and 18 include a large area (about 13 acres) of fill that is also very deep (approximately 45 feet in some locations). This area has a potential for radioactive contamination according to the Hunters Point HRA. Identification of buried radionuclides through subsurface testing would be very difficult, and if radioactivity is present it would be very limited and not spread throughout the sites. The excavation of the entire area of fill would also be very difficult because of presence of groundwater. Upon evaluation of these factors, the Navy proposed that removal would not be the preferred alternative for IR Sites 7 and 18. After considerable review by the Navy and regulatory agencies, it was proposed that a radiological surface scan of IR Sites 7 and 18 with removal of any contamination in the top 12 inches, followed by 1 foot of clean soil, followed by a 2-foot-thick soil cover will effectively prevent exposure to any radionuclides that may be present in the subsurface soil. Additionally, it was proposed that institutional controls will be placed, inspected, and enforced for IR Sites 7 and 18 to ensure the continued integrity of the covers and allow proper control of any activities that would penetrate the cover.

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by J.V. McCarthy received by email on July 31, 2008**

Comment Number	Comment	Response
Item 8	The gas seepage from landfills may or may not be chemically bonded to or as a contaminant, which could become an airborne source of contamination available across the shipyard and elsewhere as a contingency.	There are no landfills present on Parcel B. However, the area containing IR Sites 7 and 18 is a fill area with documented methane gas. A remedy is proposed for the methane source area in the Revised Proposed Plan. This remedy will address the risk to human health and the environment from this source. Further, a time-critical removal action (TCRA) is being conducted to address this source. The use of TCRA allows the Navy to get an early start on cleanup of this source area. Although the TCRA may not be completed by the time the amended ROD is signed, the Navy anticipates that the TCRA will meet the cleanup objectives described in the proposed plan. After the TCRA is completed, the Navy will evaluate the need for additional response actions.
Item 9	Geological survey is understood to be incomplete, at depth, and is likely to remain incomplete beyond transfer dates of parcels, from the Navy to the city.	For a discussion of IR Sites 7 and 18, please see the response to Item 7 above. Regarding the remainder of Parcel B, the Navy has conducted investigations, with regulatory oversight, at areas where past Navy activities may have impacted the parcel. Extensive remediation has been conducted, and more is planned, in these areas with the goal of reducing risk from past Navy contamination, and making the parcel safe for human health and the environment.
Item 10	Parcels transferred, such as Parcel A or subsequent transfers, could become a subject of future litigation resulting from covenant breach or prior cases.	The remedies proposed in the Parcel B proposed plan, and detailed in this amended ROD, address all contamination at Parcel B that resulted from past Navy activities. After all the proposed actions are conducted and operation and maintenance and ICs are implemented, the actions proposed will be protective of human health and the environment and comply with all requirements of CERCLA and the NCP.

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by Michael F. McGowan, Arc Ecology, received by email on August 1, 2008**

Comment Number	Comment	Response
1	The use of the term “cleanup” is unfortunate because it leads to expectations on the part of the public that contaminants will be removed from the site when, in fact, there are many alternative methods available for remediation of the site and a cover is the principal method proposed at Parcel B. Please change the wording in this and future documents to more accurately describe the process as remediation and more precisely describe the approach as excavation, chemical or biological treatment, or other method to achieve protection of human health and the environment. Alternatively, clearly define cleanup to mean a variety or combination of remediation methods and provide the definition conspicuously at the beginning of documents so the public is not surprised to learn that a cleanup proposed by the Navy is not what the public thinks a “cleanup” is.	The amended ROD was revised to use the term “remediation” instead of “cleanup.”
2	Some of the proposed methods such as biological or chemical treatment are still in the experimental stage and may not be cost effective. This uncertainty in their efficacy, or even if they will be used, should be acknowledged in the plan and the alternative methods to accomplish remediation should be specified if, in fact biological or chemical in situ methods are not used.	Treatability studies using the proposed in situ biological and chemical treatment technologies have been conducted at or adjacent to Parcel B and shown to be effective.
3	Presentation of risk in terms of different exposure scenarios dependent on proposed uses by redevelopment block is confusing because it seems to imply that areas other than residential would be left more contaminated and riskier than the areas designated for residential use. This opens the question, what if future development plans call for residences on the areas now designated industrial or open space? If the proposed remedies will render risks less than 1 in 1 million for cancer and a Hazard Index of less than or equal to 1 for other impacts over the entire parcel for a residential risk scenario, then the Proposed Plan should state this. If the remediation in some areas will not achieve residential exposure standards then this should be clearly stated, too, because the public has clearly expressed a desire for the shipyard to be “cleaned” to “residential standards.”	<p>The goal of the remedial action at Parcel B is to protect human health and the environment to the standards set by the federal and state regulatory agencies. All of Parcel B will be covered to protect all users from exposure to surface soil regardless of future land use.</p> <p>After all the proposed actions are conducted and operation and maintenance and ICs are implemented, the actions proposed will be protective of human health, and areas proposed for reuse other than residential (e.g. recreational) will not present more risk.</p>

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by Michael F. McGowan, Arc Ecology, received by email on August 1, 2008**

Comment Number	Comment	Response
4	The plan assumes a great deal of background information that was presented in Remedial Investigations, Feasibility Studies, Time Critical Removal Action Reports, Five Year Reviews, and others, but it only refers to them briefly in the section on the Administrative Record. Please provide an annotated bibliography of these and other key supporting documents to guide those who would like to review the administrative record but are not necessarily familiar with the relevant contents of CERCLA documents.	Descriptions of past activities and background information are summarized in the amended ROD, as well as in the previous Technical Memorandum in Support of a ROD Amendment. Both documents are available at the information repositories for review by the public. A list of documents from the Administrative Record Index, pertinent to the remedy decision for Parcel B, will be included in the amended ROD as Attachment A.
5	On page 9 the second Remedial Action Objective states that the lifetime cancer risk should not exceed the 10^{-6} to 10^{-4} range for future use scenarios. It is our understanding that at Hunters Point the risk must be 10^{-6} or lower. Please correct or clarify this risk range for radiologically impacted soil and structures.	The amended ROD was revised to remove the discussion of the risk range. The RAO for radionuclides was revised as follows. "Prevent exposure to radionuclides of concern in concentrations that exceed remediation goals (see Table 8-4) for the ingestion or inhalation pathways." The actual risk and dose will be calculated using the results of the final status surveys and these actual doses will be lower than the release limits which were used to model the exposure risk. In most cases, this results in a risk much lower than 10^{-6} .
6	Long term effectiveness and permanence of the remediation should be evaluated for a time period of at least 100 years and should take into consideration likely changes in existing conditions such as a sea level rise of more than three feet over that period. The maps of 100 year flood plains are being revised and estimates of sea level rise as a result of global climate change get revised upwards whenever new data or better models are introduced. Please acknowledge that this was considered in evaluating remedial alternatives or that it will be addressed in the Remedial Design.	The remedy components at Parcel B will be designed to consider the potential for rising sea level. For example, the top of the shoreline revetment will be sufficiently above sea level (about 13 to 15 feet) to account for a potential future rise in sea level. In addition, changes in site conditions, such as a rise in sea level, will be addressed during future 5-year reviews which address changes in site conditions and recommend modifications to the remedy if necessary to protect human health and the environment.

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by Michael F. McGowan, Arc Ecology, received by email on August 1, 2008**

Comment Number	Comment	Response
7	Children are more vulnerable to radiation in the soil than adults because, in part, their internal organs are only about one-third as far from the ground when standing and more likely to be right next to the ground when crawling or playing. Please confirm that the radiological risk calculations considered these differences that make children more sensitive receptors to radiation than adults.	As documented in Appendix A of the Technical Memorandum in Support of a Record of Decision Amendment, Radiological Addendum, the radiological risk calculations were performed using the residual radioactivity (RESRAD) model (for soils) and RESRAD-BUILD (for buildings). The receptors considered were: resident (adult), resident (child), industrial worker, recreational (adult), recreational (child), and construction worker. The following pathways were evaluated for each of the receptors: external exposure, inhalation, ingestion, and drinking water.
8	Ecology-specific comments. Considering that Parcel B has a considerable shoreline on San Francisco Bay the treatment of ecological exposure to contaminants is very brief and incomplete and should be expanded and clarified.	Please refer to the responses below.
8a	On page 6, "The SLERA concluded that ...chemicals in shoreline sediment including several metals, pesticides, and PCBs may pose risk to organisms that live along the shoreline." The alternatives only mention removal of lead, mercury, and organic chemicals. They do not include aluminum, copper, and zinc that are listed in Table 4 as chemicals of concern. Please explain how the environment will be protected from these and other chemicals of concern in addition to those specifically listed in the description of the alternatives.	The shoreline revetment will provide protection from all the chemicals in shoreline sediment that are of concern for ecological receptors.
8b	Page 8 Groundwater bullet 4 states that the Remedial Action Goal for groundwater is to prevent or minimize the migration to surface water of San Francisco Bay of chromium VI above 50 µg/L, copper above 28.04 µg/L, lead above 14.44 µg/L, and mercury above 0.6 µg/L. What is the basis for these values and why weren't they included in Table 5 or in a separate table of preliminary remediation goals for ecological receptors?	The values for copper, lead, and mercury are based on the Hunters Point groundwater ambient levels for these chemicals. The value for chromium VI is based on the criterion in Table 3-3 of the Water Quality Control Plan for the San Francisco Bay Basin prepared by the San Francisco Bay Regional Water Quality Control Board. These values are applicable to surface water, not groundwater, and therefore were not included in Table 5. The need for remediation of groundwater to protect the beneficial uses of the bay, including ecological receptors, will be established based on the trigger level analysis that will be conducted during the remedial design. Section 7.3 of the amended ROD discusses the use of trigger levels in more detail.

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by Michael F. McGowan, Arc Ecology, received by email on August 1, 2008**

Comment Number	Comment	Response
8c	Page 7 states that "Ecological RAOs were developed only for soil and sediment in shoreline areas." Does this mean that ecological RAOs for soil and sediment were developed only for shoreline areas? What about ecological risks to songbirds or earthworms or other organisms away from the shoreline?	RAOs were developed only for the shoreline area. The majority of Parcel B, approximately 75 percent, is covered by pavement and buildings. With little open space for flora and fauna, Parcel B is considered to have insignificant habitat value and poses an insignificant risk to terrestrial ecological receptors. Exposure pathways to terrestrial species are incomplete because of a lack of habitat and the predominance of paved areas at Parcel B.
9	ARARS. Page 15 states that the significant potential ARARs listed in Attachment 1 will be met by the preferred alternatives. It is my understanding that an Applicable or Relevant and Appropriate Regulation is by definition significant and must be complied with by the remediation alternative. Please confirm that all ARARs will be complied with including those considered most significant that are listed in Attachment 1.	All applicable or relevant and appropriate requirements (ARAR) will be met by the proposed remedial actions, including those listed on Attachment 1 of the proposed plan.
10	The time period between the end of the comment period and the issuance of the Record of Decision seems very brief to fully respond to comments from the public. This is especially true considering that many comments are likely to be submitted near the end of the period and that weekend days and the need for any internal reviews by the Navy legal authorities substantially reduce the actual work days available to respond to comments. Furthermore, the revised (corrected) Proposed Plan was not released to the public until just before the public meeting in the middle of the nominal review period. Community acceptance is one of the nine CERCLA criteria for a remedial design so responses to community comments should be done thoroughly and completely, not rushed to meet a self-imposed timeline. Please respond to this concern for Parcel B, which already has a ROD that was developed over a longer time frame, and keep it in mind for other parcels such as D and G that have not had the same amount of time for the public to consider proposed cleanup alternatives.	<p>The Navy has considered and responded to all comments received during the public comment period on the Proposed Plan. The Navy works together with the regulatory agencies during each step to complete the cleanup of Parcel B according to all applicable laws to protect human health and the environment. The Navy develops schedules for cleanup in coordination with both the regulatory agencies and the public (through the RAB). The schedule for transfer of Parcel B will not affect the completeness or effectiveness of the cleanup.</p> <p>The changes made to between the Proposed Plan and the Revised Proposed plan were minor in nature and did not involve or affect the information that the Navy is relying upon to make its remedy selection decision. Specifically, Figure 4 was inadvertently omitted, Figure 5 was printed in place of Figure 4, and Figure 7 was duplicated as Figure 5.</p>

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comment by Robinette Williams received by mail on August 4, 2008**

Comment Number	Comment	Response
1	Long-term environmental impact on the community as a whole. What will happen to the / how will the contaminants in the shipyard be disposed of? Where will the waste be sent?	Waste soil and other materials excavated at Parcel B will be disposed of off site depending on the characteristics of the waste. Specific facilities to receive the waste will be selected by the construction contractors, with the approval of the regulatory agencies. During previous removal actions, landfills within California were used for disposal of nonradioactive materials. Some wastes removed from Parcel B must be disposed of at facilities that are not located in California because adequate facilities do not exist in the state. For instance, the State of California does not allow disposal of low-level radioactive waste within the boundaries of the state. Therefore, all waste containing radioactive material must be disposed of elsewhere. Low-level radioactive waste will be disposed of at the EnergySolutions Operations facility located in Clive, Utah.

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comment by Virgil Johnson received by mail on August 4, 2008**

Comment Number	Comment	Response
1	<ul style="list-style-type: none"> • The cause of the asbestos (sic) to the people is horrible • The radioactivity • Cleanup needs to be taken care of carefully • The pushout of the colored people being displaced 	The Navy works together with the regulatory agencies during each step to complete the remediation of Parcel B according to all applicable laws to protect human health and the environment. The Navy develops schedules for remediation in coordination with both the regulatory agencies and the public (through the RAB).

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by People Organized to Win Employment Rights (POWER) received by mail on August 4, 2008**

Comment Number	Comment	Response
1	This letter is intended to provide written public comment for the Proposed Plan for Parcel B at Hunters Point Shipyard in San Francisco, California on behalf of People Organized to Win Employment Rights (POWER). POWER is a membership organization comprised, in part, of residents of the Bayview Hunters Point community.	Comment acknowledged.
2	As an organization, we are concerned about the proposed plan by the Navy to address contamination in the soil, groundwater, and structures at Parcel B. In particular, we have specific concerns about the “preferred” alternative described as S-5: Excavation, Source Removals, Covers, SVE, Revetment, ICs.	Please refer to the responses below.
3	The Navy’s plan to transport excavated soil considered unsafe for human health and ecological receptors does not, in our opinion, meet the will of the voters of the City and County of San Francisco, nor to the residents and community members of Bayview Hunters Point. In general, our members support a remediation plan which includes, but is not limited to, full excavation of the contaminated soil and sediment, comprised of debris from construction materials and other contaminated substances. While it may be an expensive alternative, community members support a remediation plan that over the long term ensures a health existence for future residents on the Hunters Point Shipyard.	Excavation and off-site disposal was the remedy for soil selected in the 1997 ROD. However, the widespread presence of metals, especially arsenic and manganese, in the soil at Parcel B would require the removal of all the soil at the site to a depth of 10 feet below ground surface to reduce the potential risk to human health to an acceptable level. Continuation of the original 1997 remedy was considered in the Proposed Plan (refer to the alternative labeled “1997 ROD” in Table 10), but this option ranked poorly in all evaluation criteria in the comparative analysis. Soil covers, together with appropriate controls to protect their integrity, will provide a permanent and protective remedy for exposure to contaminants in soil at Parcel B.

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by People Organized to Win Employment Rights (POWER) received by mail on August 4, 2008**

Comment Number	Comment	Response
4	Our members do not support the plan to cover contaminated soil and sediment on Parcel B. We have real concerns about the viability of a cap of any materials that would be able to withstand infrastructure development on Parcel B, accidental puncturing during construction on the site, and/or earthquake of the magnitude expected to hit the Bay Area in the next decade. In the last four years, we have seen numerous examples of shoddy construction work in Bayview Hunters Point that has exposed local residents to unsafe levels of dust containing asbestos. Currently, there are few institutional policies in place and no independent monitor outside of politically motivated agencies; as such, we cannot be assured that the work would be done in a responsible fashion that had, as its first priority, the protection of the health and safety of community residents.	Any breaching or alteration of the cover post-transfer will be conducted in compliance with the Covenant(s) to Restrict Use of the Property, Quitclaim Deed(s), and the Parcel B risk management plan, all of which will be reviewed and approved by the regulatory agencies. The remedy components (for example, covers) at Parcel B will be designed to withstand earthquakes in accordance with California state laws (California Code of Regulations Title 22 Section 66264.310[a][5]). In addition, the operation and maintenance plans for the covers will include provisions for repairs to follow an earthquake, also in accordance with state law (California Code of Regulations Title 22 Section 66264.310[b][1]).
5	There is extensive documentation that prefers permanent cleanup as opposed to a cap. For example, according to Report 4 of the Council on Science and Public Health: Expansion of Hazardous Waste Landfills Over Aquifers, "No liner can be expected to remain impervious forever. As a result of interactions with waste, environmental effects, installation problems, and operating practices, liners eventually may degrade, tear, or crack and allow liquids to migrate out of the unit...These technologies (double liners and leachate collection systems) may not effectively reduce the longer-term risk for landfills, especially for persistent and mobile compounds, because the containment system may only delay leachate release from the landfill until after post-closure, when the cap and leachate collection system begin to fail."	There are no landfills present on Parcel B and no leachate requiring collection. The soil cover is not intended to function as a liner or to prevent the movement of liquids and, therefore, will not be subject to the issues described in the comment. Soil covers, together with appropriate controls to protect their integrity, will provide a permanent and protective remedy for exposure to contaminants in soil at Parcel B. The cover will act to physically eliminate exposure to soil and prevent risk.

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by People Organized to Win Employment Rights (POWER) received by mail on August 4, 2008**

Comment Number	Comment	Response
6	There are widespread concerns throughout the community that the alternative involving merely excavating some parts of the Parcel and placing a cover over other areas does not take into account the very real possibility that there will be a major earthquake in this area within the next 10 to 30 years. Those who live near the Shipyard, as well as those who live in the community surrounding the Shipyard, are concerned that a concrete cap will not withstand the magnitude earthquake that the Bay Area is preparing for. Additionally, without specific details as to the “durable” type of material outlined in the Amended ROD, there is little faith that any material placed on top of a landfill (which is prone to liquefaction) can withstand the force of an earthquake.	The remedy components (for example, covers) at Parcel B will be designed to withstand earthquakes in accordance with California state laws (California Code of Regulations Title 22 Section 66264.310[a][5]). In addition, the operation and maintenance plans for the covers will include provisions for repairs to follow an earthquake, also in accordance with state law (California Code of Regulations Title 22 Section 66264.310[b][1]).
7	Additionally, the Environmental Protection Agency states, “The longer one wishes to contain waste, the more difficult the task becomes. Synthetic liners and caps will degrade; soil liners and caps may erode and crack...EPA is not aware of any field data showing successful long-term containment of waste facilities which have not been maintained over time (Federal Register, May 26, 1981, pgs. 28314-28328).”	Soil covers, together with appropriate controls to protect their integrity, will provide a permanent and protective remedy for exposure to contaminants in soil at Parcel B. The protectiveness of the remedy will be evaluated at least every 5 years to ensure it remains protective. Future 5-year reviews will address changes in site conditions and recommend modifications to the remedy if necessary to protect human health and the environment.

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by People Organized to Win Employment Rights (POWER) received by mail on August 4, 2008**

Comment Number	Comment	Response
8	In general, we are also concerned that the Amended ROD and its proposed alternatives are a mechanism with which to fast track development on a site where there are valid and serious concerns about the feasibility of safe residential habitation. While we are not opposed to development in Bayview Hunters Point and are advocates for development that benefits the local community, we cannot, in good faith, support an Amended ROD that seemingly contradicts the Navy's own findings in relationship to the viability of safe habitation. Additionally, the Amended ROD proposes to restrict contact with the soil and groundwater through institutional controls (ICs) and other types of controls. We are concerned about the actual viability of safe human use without increased risk of cancer and other illnesses related to exposure to radiation and other harmful toxic substances. In a community where more than 50 percent of residents are afflicted with asthma or another respiratory illness, and where the leading cause of death is some form of cancer, we cannot risk yet another generation to be afflicted by the same risks.	The Navy works together with the regulatory agencies during each step to complete the remediation of Parcel B according to all applicable laws to protect human health and the environment. The Navy develops schedules for remediation in coordination with both the regulatory agencies and the public (through the RAB). The schedule for transfer of Parcel B will not affect the completeness or effectiveness of the remediation.
9	The Navy's plan to transport excavated soil considered unsafe for human health and ecological receptors does not detail where the soil and sediment will be taken. The description of the alternative mentions that the soil and sediment, as well as contaminated pipes and materials will be taken out of the Bayview Hunters Point community and brought to a radiological waste facility off site; however, as residents of Bayview Hunters Point, we are all too familiar with the fact that surrounding those facilities are often low-income and working class communities. As an organization that fights for the health and safety of working class, low-income communities of color, we do not support the relocation of materials containing harmful substances, and any plan to transport contaminated materials to another facility off site should be accompanied by a description of where the contaminated materials will be taken, and a demographic accounting of the surrounding community.	Some wastes removed from Parcel B must be disposed of at facilities that are not located in California because adequate facilities do not exist in the state. For instance, the State of California does not allow disposal of low-level radioactive waste within the boundaries of the state. Therefore, all waste containing radioactive material must be disposed of elsewhere. Low-level radioactive waste will be disposed of at the EnergySolutions Operations facility located in Clive, Utah. This facility is located about 80 miles west of Salt Lake City in a remote, arid environment with no surrounding community.

Amended Proposed Plan for Parcel B, Hunters Point Shipyard**Written Comments by People Organized to Win Employment Rights (POWER) received by mail on August 4, 2008**

Comment Number	Comment	Response
10	Additionally, the Amended ROD should include a negotiated agreement with the community as to who takes responsibility if (and when) the cap breaks and places the health and safety of workers and community members at risk. Community members also deserve to receive a full accounting of the timeline under which this work may take place.	The Navy maintains active contact with the public through the RAB and through direct contact by telephone, email, facsimile, and regular mail. The RAB will remain in place as long as the Navy owns the property at Hunters Point. The RAB would be discontinued after the Navy's ownership ends. However, Navy staff would still be available by the same direct contact methods. Other oversight mechanisms available include the Community Advisory Committee provided through the San Francisco Redevelopment Agency. In addition, citizens can contact local elected officials and regulatory agencies to express any concerns about oversight.
11	Finally, before the Amended ROD is implemented, the community should be allowed to participate in a democratic process whereby it is they who choose the type of materials to be used in any cap. Surely there are varying materials that are used for covers, and some are likely better than others. Community members should be allowed to participate in the process of choosing which material works best and feels safest for them, and should be allowed to reject the Amended ROD if the materials proposed do not meet the health and safety standards deemed necessary.	Materials used during remediation, including the cover material, will be selected during the remedial design phase of the project and will not be identified in the amended ROD. Cover materials will be selected to be robust and persistent over time, in accordance with state and federal laws. Community members may comment on the cover materials selected in the remedial design by participating in the RAB or reviewing the design documents directly and providing comments to the Navy. The goal of the remedial action at Parcel B is to protect human health and the environment to the standards set by the federal and state regulatory agencies.
12	In 2000, San Francisco voters overwhelmingly voted in favor of Proposition P, which was a resolution calling on the Navy to clean the Shipyard to residential standards, so that future generations might benefit from a renewed area of land that was decimated by the Navy. We feel that the proposed amendments to the 1997 ROD do not adequately reflect a plan that protects the health and safety of community members, because they do not adequately detail the ways in which the Navy plans to ensure the full remediation of a site that was decimated by them nearly 40 years ago. Residents in Bayview Hunters Point have waited a long time to see full remediation happen, and deserve nothing less than that.	The goal of the remedial action at Parcel B is to protect human health and the environment to the standards set by the regulatory agencies. Cleanup goals consider the expected future land use so not all areas will be remediated to residential levels. For example, areas that will become open space will be remediated to standards that consider recreational use. Nevertheless, all of Parcel B will be covered to protect all users from exposure to the surface soil.